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General Plan

2035

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Part I: Introduction

Executive Summary

The unincorporated areas of Los Angeles County are comprised of approximately 2,650 square miles, and over one million people. The Los Angeles County General Plan provides the policy framework for how and where the unincorporated areas will grow through the year 2035, establishes goals, policies, and programs to foster healthy, livable, and sustainable communities. This document represents a comprehensive effort to update the County's 1980 General Plan.

I. Guiding Principles

The following five guiding principles work to emphasize the concept of sustainability throughout the General Plan.

1. Employ Smart Growth: Shape new communities to align housing with jobs and services; and protect and conserve the County's natural and cultural resources, including the character of rural communities.

2. Ensure community services and infrastructure are sufficient to accommodate growth: Coordinate an equitable sharing of public and private costs associated with providing or upgrading community services and infrastructure to meet growth needs.

3. Provide the foundation for a strong and diverse economy: Protect areas that generate employment and promote programs that support a stable and well educated workforce. This will provide a foundation for a jobs-housing balance and a vital and competitive economy in the unincorporated areas.

4. Excellence in environmental resource management: Carefully manage the County's natural resources, such as air, water, wildlife habitats, mineral resources, agricultural land, forests, and open space in an integrated way that is both feasible and sustainable.

5. Provide healthy, livable and equitable communities: Design communities that incorporate their cultural and historic surroundings, are not overburdened by nuisance and negative environmental factors, and provide reasonable access to food systems. These factors have a measureable effect on public well-being.

II. Planning Areas Framework

- The General Plan is also the foundational document for future planning efforts.
- The General Plan identifies 11 Area Plans.
- The purpose is to provide a mechanism for local communities to work with the County to develop plans that respond to their unique and diverse character.

The Los Angeles County General Plan is the foundational document for all community-based plans that serve the unincorporated areas. The General Plan identifies 11 Area Plans. The purpose of the Planning Areas Framework is to provide a mechanism for local communities to work with the County to develop plans that respond to their unique and diverse character. The 11 Planning Areas are:

- Antelope Valley Planning Area
- Coastal Islands Planning Area
- East San Gabriel Valley Planning Area
- Gateway Planning Area
- Metro Planning Area
- San Fernando Planning Area
- Santa Clarita Valley Planning Area
- Santa Monica Mountains Planning Area
- South Bay Planning Area
- West San Gabriel Valley Planning Area
- Westside Planning Area

III. General Plan Elements

The General Plan is comprised of the following elements:

Land Use Element

The Land Use Element designates land uses, and provides strategies and planning tools to facilitate and guide future development and revitalization efforts.

Mobility Element

The Mobility Element provides an overview of the transportation infrastructure and strategies for developing an efficient and multimodal transportation network. The Highway Plan and the Bicycle Master Plan are sub-components of the Mobility Element.

Air Quality Element

The Air Quality Element summarizes air quality issues and outlines the goals and policies that will improve air quality and reduce greenhouse gas emissions. The Community Climate Action Plan is a sub-component of the Air Quality Element.

Conservation and Natural Resources Element

The Conservation and Natural Resources Element guides the long-term conservation of natural resources and preservation of available open space areas.

Parks and Recreation Element

The Parks and Recreation Element plans and provides for an integrated parks and recreation system that meets the needs of residents.

Noise Element

The Noise Element reduces and limits the exposure of the general public to excessive noise levels. The Noise Element sets the goals and policy direction for the management of noise.

Safety Element

The purpose of the Safety Element is to reduce the potential risk of death, injuries, and economic damage resulting from natural and man-made hazards.

Public Services and Facilities Element

The Public Services and Facilities Element promotes the orderly and efficient planning of public services and facilities and infrastructure in conjunction with development and growth.

Economic Development Element

The Economic Development Element outlines economic development goals, and provides strategies that contribute to economic well-being.

Housing Element

The Housing Element analyzes and plans for existing and future housing needs. The Housing Element addresses the housing needs of all income levels and accommodates a diversity of housing types and special needs.

Chapter 1: Introduction

I. Purpose

The California Government Code requires that each city and county adopt a general plan "for the physical development of the county or city, and any land outside its boundaries which bears relation to its planning." The Los Angeles County General Plan is the guide for long-term physical development and conservation through a framework of goals, policies, and implementation programs.

The unincorporated areas of Los Angeles County are comprised of approximately 2,650 square miles, and over one million people. The Los Angeles County General Plan provides the policy framework for how and where the unincorporated areas will grow through the year 2035, establishes goals, policies, and programs to foster healthy, livable, and sustainable communities. This document represents a comprehensive effort to update the County's 1980 General Plan.

The General Plan guides growth countywide through goals, policies, and programs that discourage sprawling development patterns; protect areas with hazard, environment and resource constraints; encourage infill development in areas near transit, services and existing infrastructure; and make a strong commitment to ensuring sufficient services and infrastructure. It also lays the foundation for future community-based planning initiatives that will identify additional opportunities for accommodating growth.

II. Document Organization

Part I: Introduction: This section is a user's guide to the General Plan, with information on document organization, applicability, and the guiding principles of the General Plan. This section also provides background information and the growth forecast for the unincorporated areas.

Part II: Planning Areas Framework: This section provides an overview of the Planning Areas Framework, which facilitates the planning of all unincorporated areas through 11 identified planning areas.

Part III: General Plan Elements: This section contains the elements of the General Plan. These elements identify unincorporated countywide planning issues, as well as the goals and policies to address them. Policies are organized by topic for ease of use.

Part IV: General Plan Implementation Program: This section provides information on updating and maintaining the General Plan, including data and maps. This section also contains the implementation programs of the General Plan. The implementation programs create actions for policies, and also identify lead/partner agencies, and a timeline for program completion. The implementation programs are organized by General Plan element. This section includes a summary of all goals and policies.

Appendices: The appendices contain many of the data, methodologies and assumptions, background studies, and documentation that informed the development of the General Plan. The appendices are organized by General Plan element.

III. How to Use the General Plan

The General Plan provides a general policy framework for community-based plans, such as area plans, community plans and coastal land use plans, and works in conjunction with several planning documents, including strategic plans and master plans. The General Plan is implemented by the Los Angeles County Code, in particular, Titles 21 (Subdivisions) and 22 (Planning and Zoning). The California Government Code requires that all zoning ordinances, zone changes, subdivisions, capital improvement plans, and public works projects be consistent with the General Plan.

The General Plan also serves as an advisory countywide document to coordinate land use planning, public service and facilities planning, circulation, environmental management and regional land use and transportation initiatives with the 88 cities within Los Angeles County and with special districts and regional agencies, such as the Southern California Association of Governments (SCAG), the Los Angeles County Metropolitan Transportation Authority (Metro), Los Angeles County Sanitation Districts, air quality districts, water districts and suppliers, and school districts.

There are many regulatory and policy components to this General Plan. Below are instructions for using and interpreting the General Plan:

- **Guiding Principles:** Guiding principles serve as the base metric for interpreting the General Plan goals, policies, and implementation programs.

- **Goals:** A goal is a general direction-setter that expresses the community's values. It may be abstract in nature and is generally not quantifiable or time dependent.

- **Policies:** A policy is a specific statement or diagram that guides decision-making. It indicates a commitment of the County to a particular course of action. A policy may be carried out through implementation programs and/or by direct application of the policy. No policy, whether in written or diagram form, shall be given greater weight than any other policy.

- **Topics:** Topics are used to categorize policies throughout the General Plan elements. Topics are meant to facilitate ease of use, and are not to be used to interpret policies.

- **Implementation Programs:** Implementation programs identify actions for carrying out the policies of the General Plan. Each program identifies lead/partner agencies; however, they are not exclusive and new partners can be added as needed. The programs also include general timeframes that assume the availability of adequate funding. The programs and timeframes may need to be modified accordingly if adequate funding is not available.

- **Maps and Tables:** Maps and tables provide background information, technical justification for policies, and/or other policy information. They should be updated regularly and interpreted in the context of General Plan goals and policies.

Chapter 2: Applicability

The following provisions shall apply to complete applications filed prior to the effective date of this General Plan.

The applicant can choose whether the application will be reviewed for consistency with the previously adopted General Plan or with this General Plan. In either case, approval of the application is not guaranteed.

If an application is reviewed for consistency with the previously adopted General Plan, the applicant may modify the application prior to consideration by the Reviewing Authority. The modification will be reviewed for consistency with the previously adopted General Plan if it does not change the housing type (e.g., from single family to two family or multifamily) nor increase:

- The residential density;
- The floor area or lot coverage of non-residential space;
- The amount of grading; or
- The area of ground disturbance.

A modification may necessitate the submittal of revised, updated, or additional materials and reports, such as site plans, elevations, oak tree reports, etc. In addition, a modification may necessitate additional environmental review pursuant to the California Environmental Quality Act and the County's environmental review procedures.

Modification to an application that is already approved, but not used can be reviewed for consistency with the previously adopted General Plan if it qualifies to be reviewed as a Revised Exhibit "A" or an Amended Site Plan. Otherwise, a modification shall be considered a new application and shall be reviewed for consistency with this General Plan.

If an approval is used and has a grant term, the approved use may be maintained until the end of the grant term. At the end of the grant term, the use shall be subject to the General Plan policies in effect at that time. During the grant term, a modification to the approved use will be reviewed for consistency with the previously adopted General Plan if it qualifies to be reviewed as a Revised Exhibit "A" or an Amended Site Plan. Otherwise, a modification to the approved use shall be subject to the General Plan policies in effect at that time.

If an approval is used and does not have a grant term, the approved use may be maintained in perpetuity unless a time limit is specified in the Zoning Code. In addition, all applicable non-conforming use provisions of the Zoning Code shall apply to the approved use. A modification to the approved use will be reviewed for consistency with the previously adopted General Plan if it qualifies to be reviewed as a Revised Exhibit "A" or an Amended Site Plan. Otherwise, a modification to the approved use shall be subject to the General Plan policies in effect at that time.

Chapter 3: Guiding Principles

Guiding Principles

Sustainability requires that planning practices meet the needs of Los Angeles County without compromising the ability of its future generations to realize their economic, social, and environmental goals. The following five guiding principles work to emphasize the concept of sustainability throughout the General Plan.

1. Employ Smart Growth: Shape new communities to align housing with jobs and services; and protect and conserve the County's natural and cultural resources, including the character of rural communities.

The General Plan implements smart growth by using strategies that are tailored to each community. Strategies, such as transit-oriented development, will create vibrant centers around transit stations that promote neighborhoods where people can live, work, and shop without the need to drive to each destination. Another smart growth strategy is to facilitate the creation of vibrant and active corridors that connect major centers and destinations, and thriving neighborhood centers within the unincorporated areas. These work in conjunction with other smart growth strategies to "green" streets and buildings, and protect and conserve its natural resources.

2. Ensure community services and infrastructure are sufficient to accommodate growth: Coordinate an equitable sharing of public and private costs associated with providing or upgrading community services and infrastructure to meet growth needs.

Community services and infrastructure serve as the backbone of a community. Quality of life is dependent upon the quality and availability of schools, parks, libraries, police and fire services, cultural facilities, and community gathering places; as well as circulation systems, water, sewers, flood control, utilities, communication, and waste management. Successful land use planning and growth management rely on the orderly and efficient planning of community services and infrastructure. The key to growth management is the commitment to proactively coordinate with public and private partners to provide and maintain sufficient services and infrastructure that are commensurate with growth. The General Plan establishes policies and programs to address existing deficiencies in community services and infrastructure, and to ensure the provision of sufficient community services and infrastructure for new developments.

3. Provide the foundation for a strong and diverse economy: Protect areas that generate employment and promote programs that support a stable and well educated workforce. This will provide a foundation for a jobs-housing balance and a vital and competitive economy in the unincorporated areas.

Ensuring the economic vitality and long-term competitiveness of the unincorporated areas requires policies that will promote a stable and well-educated job base, generate tax revenues to support quality services, provide for a jobs-housing balance, and accommodate the businesses and industries that represent the jobs of the future. As planning for future growth and the appropriate land use mix has major impacts on the local and regional economy, the General Plan addresses the protection of industrial land in the unincorporated areas. The General Plan also provides policies and programs to foster economic development.

4. Excellence in environmental resource management: Carefully manage the County's natural resources, such as air, water, wildlife habitats, mineral resources, agricultural land, forests, and open space in an integrated way that is both feasible and sustainable.

Stewardship of the natural resources in Los Angeles County, such as air, water, wildlife habitats, mineral resources, agricultural land, forests, and open space, is essential to a successful sustainability strategy. Los Angeles County as a whole is urbanized, and the majority of its natural resources are located in the unincorporated areas. The General Plan provides policy guidance to protect and conserve natural resources and to improve the quality of its air, water and biological resources. The General Plan also includes goals, policies and programs to minimize risks and discourage development in areas that are prone to safety hazards, such as earthquakes, floods and wildfires.

5. Provide healthy, livable and equitable communities: Design communities that incorporate their cultural and historic surroundings, are not overburdened by nuisance and negative environmental factors, and provide reasonable access to food systems. These factors have a measureable effect on public well-being.

The General Plan promotes the creation of communities that foster physical activity, safety, and health. Land use that promotes physical activity and access to healthy food is a strategy to address the obesity epidemic and corresponding high rates of chronic diseases. In addition, policies to address environmental conditions, such as poor air quality, polluted stormwater runoff, deteriorated housing conditions, and ground and surface contamination have a direct impact on public health. Furthermore, promoting safety through improvements in the County's bikeway network, the creation of pedestrian-friendly environments and complete streets that are accessible to all users produce positive outcomes from a land use and public health perspective.

The General Plan addresses environmental justice by providing information and raising awareness to a number of environmental issues that impact the unincorporated areas, including but not limited to impacts from excessive noise, water pollution, air pollution, heavy industrial uses. The General Plan also emphasizes the importance of sufficient services and infrastructure; protecting and conserving open space, natural and resource areas, and making them accessible; and preventing and minimizing pollution impacts; and stakeholder participation in planning efforts.

Environmental Justice

Environmental justice is the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

An environmentally just Los Angeles County is a place where:

- Environmental risks, hazards, and public service related environmental services, such as trash hauling and landfills, are distributed equitably without discrimination;
- Existing and proposed negative environmental impacts are mitigated to the fullest extent to protect the public health, safety, and well-being;
- Access to environmental investments, benefits, and natural resources are equally distributed; and
- Information, participation in decision-making, and access to justice in environment-related matters are accessible to all.

Chapter 4: Background

I. Location and Description

With approximately 4,083 square miles, Los Angeles County is geographically one of the largest counties in the country. Los Angeles County stretches along 75 miles of the Pacific Coast of Southern California, and is bordered to the east by Orange County and San Bernardino County, to the north by Kern County, and to the west by Ventura County. Los Angeles County also includes two offshore islands, Santa Catalina Island and San Clemente Island. Figure 4.1 shows the regional location of Los Angeles County.

Figure 4.1: Regional Location of Los Angeles County Map

Unincorporated Areas

The unincorporated areas account for approximately 65 percent of the total land area of Los Angeles County, as shown in Table 4.1.

Table 4.1: Los Angeles County Distribution of Land Area

County Land Components	Cities (sq. miles)	Unincorporated (sq. miles)	Total (sq. miles)
Mainland	1,423.7	2,528.3	3,952
San Clemente Island	0	56.4	56.4
Santa Catalina Island	2.9	71.9	74.8
Total	1,426.6	2,656.6	4,083.2

Source: Los Angeles County Department of Public Works

The unincorporated areas in the northern portion of Los Angeles County are covered by large amounts of sparsely populated land, and include the Angeles National Forest, part of the Los Padres National Forest, and the Mojave Desert. The unincorporated areas in the southern portion of Los Angeles County consist of many non-contiguous land areas, which are often referred to as the County's unincorporated urban islands.

The County's governmental structure is comprised of five Supervisorial Districts. The Board of Supervisors is the governing body of the County, and makes legislative land use decisions for the unincorporated areas. Figure 4.2 shows the unincorporated areas, and Figure 4.3 shows the County's Supervisorial Districts.

Figure 4.2: Los Angeles County Unincorporated Areas Map

Figure 4.3: Los Angeles County Supervisorial Districts Map

Climate and Topography

Los Angeles County is a land of beaches, valleys, mountains, and deserts. Overall, the climate can be characterized as “Mediterranean,” with hot, dry summers and mild, wet winters. The diversity of the topography results in localized climate zones that are roughly divided by the Transverse Ranges (Santa Monica Mountains and San Gabriel Mountains). The climate zones are closely tied to geologic landforms and vary based on elevation changes and distance from the ocean. These climate zones can be grouped into three broad categories:

Coastal Plain

The coastal plain includes the beaches, valleys, and canyons that occupy the Los Angeles Basin and terminate at the Transverse Ranges. During the dry season, the determining factor in coastal plain weather is the proximity to the Pacific Ocean and the resultant marine layer. The marine layer acts as a buffer, which is evidenced by relatively cool and constant temperatures, low clouds, fog, and haze. The marine layer settles over the Basin during the evening and early morning before being burned off by sunshine midday. Due to the dominance and stability of the high pressure area in the Basin, precipitation is rare between May and November.

Mountain

Climates in the mountains are characterized by lower average temperatures and heavier rainfall than in the coastal plain. The Transverse Ranges are further removed from the climatic influences of marine wind patterns and experience the additional influence of altitude.

High Desert

The high desert includes the Antelope Valley, which is the westernmost portion of the Mojave Desert. The high desert is located more than 50 miles inland, and is removed from marine influences and experiences a more extreme type of climate. The Transverse Ranges act as a barrier to rain-bearing clouds moving inland. In addition, the Antelope Valley is home to several wildlife and wildflower sanctuaries that thrive in the often inhospitable climate found in the high desert.

Regional Context

The Southern California Association of Governments (SCAG) is the Metropolitan Planning Organization that represents the counties of Los Angeles, Orange, Ventura, Imperial, San Bernardino, and Riverside, and 190 cities. Los Angeles County is further divided into nine SCAG subregions: North Los Angeles County; San Fernando Valley Council of Governments; Las Virgenes Malibu Conejo Council of Governments; Arroyo Verdugo; Westside Cities Council of Governments; South Bay Cities Council of Governments; City of Los Angeles; San Gabriel Valley Council of Governments; and Gateway Cities Council of Governments. Table 4.2 shows population growth in the SCAG region, by county, between 2000 and 2010.

Table 4.2 Population for the SCAG Region, County, 2000 and 2010

County	2000 Population	Percent of Region	2010 Population	Percent of Region
Los Angeles	9,519,000	57.6%	9,819,000	54.4%

Orange	2,846,000	17.2%	3,010,000	16.7%
Riverside	1,545,000	9.4%	2,190,000	12.1%
San Bernardino	1,709,000	10.4%	2,035,000	11.3%
Ventura	753,000	4.6%	823,000	4.6%
Imperial	142,000	0.9%	175,000	1.0%
Total	16,516,000	100.0%	18,052,000	100.0%

Source: SCAG 2012-2035 RTP/SCS

Existing Population

There are approximately 10 million people in Los Angeles County as a whole, with approximately one million living in the unincorporated areas. Table 4.3 shows the percent change in population from the year 2000 to 2010.

Table 4.3: Los Angeles County Population, 2000 and 2010

Area	Population 2000	Population 2010	Increase (%)
Los Angeles County	9,519,338	9,818,605	3%
Unincorporated Areas	986,050	1,057,088	7%

Source: 2000 and 2010 U.S. Census

Race and Ethnicity

The cultural diversity of residents plays a significant role in defining the character of the unincorporated areas. Influenced by migratory patterns, the approximately 10 million residents comprise one of the most diverse communities in the country. The California Department of Finance estimates that by the year 2050, the Hispanic and Asian populations will account for more than 80 percent of the residents. Planning efforts must acknowledge and account for the diversity and social values that accompany these demographic shifts. Table 4.4 shows the racial and ethnic composition of the unincorporated areas.

Table 4.4: Unincorporated Los Angeles County, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	512,219	48%
Black or African-American	96,384	9%
American Indian or Alaska Native	8,851	1%
Asian	124,109	12%
Native Hawaiian and Other Pacific Islander	2,037	0.2%
Some Other Race	271,531	26%
Two or More Races	41,957	4%
Total	1,057,088	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	602,045	57%
Not Hispanic or Latino	455,043	43%
Total	1,057,088	100%

Source: 2010 U.S. Census

II. Growth Forecast

Population, housing, and employment projections play a critical role in the planning process and can help identify and guide future development patterns. The growth forecast includes population projections, household projections, and employment projections. It is important to note that the General Plan uses a regional strategy to guide growth in a way that plans for more efficient and sustainable land use patterns to address climate change, mobility, and community development. The General Plan plans for total growth by encouraging development in areas with infrastructure and access to transit, and discouraging growth in greenfields and environmentally-sensitive and hazardous areas.

The General Plan's growth forecast is from the SCAG 2012 Regional Transportation Plan (RTP). The growth projections in Tables 4.5, 4.6 and 4.7 provide a picture of probable occurrences rather than assured outcomes. Furthermore, the projections do not account for unforeseen future events, as well as changes in General Plan policies.

Table 4.5: Los Angeles County Population Projections

	Population 2008	Population 2035	Increase (%)
Los Angeles County	9,778,000	11,353,000	16%
Unincorporated Areas	1,052,800	1,399,500	33%

Source: SCAG 2012-2035 RTP/SCS

Table 4.6: Los Angeles County Household Projections

	Households 2008	Households 2035	Increase (%)
Los Angeles County	3,228,000	3,852,000	19%
Unincorporated Areas	298,100	405,500	36%

Source: SCAG 2012-2035 RTP/SCS

Table 4.7: Los Angeles County Employment Projections

	Employment 2008	Employment 2035	Increase (%)
Los Angeles County	4,340,000	4,827,000	11%
Unincorporated Areas	237,000	318,100	34%

Source: SCAG 2012-2035 RTP/SCS

III. Community Participation

The General Plan reflects a comprehensive effort to facilitate stakeholder participation and garner local input in the development of its goals, policies and programs. Appendix B provides an overview and timeline of the recent outreach activities and drafts of the General Plan that have been released to the public, and a summary of community and stakeholder identified issues that informed the development of the General Plan Guiding Principles.

Part II: Planning Areas Framework

Chapter 5: Planning Areas Framework

I. Planning Areas Framework

The Los Angeles County General Plan is the foundational document for all community-based plans that serve the unincorporated areas. The purpose of the Planning Areas Framework is to provide a mechanism for local communities to work with the County to develop plans that respond to their unique and diverse character. As shown in Figure 5.1, the General Plan identifies 11 planning areas, which make up the Planning Areas Framework. The 11 planning areas are:

- Antelope Valley Planning Area
- Coastal Islands Planning Area
- East San Gabriel Valley Planning Area
- Gateway Planning Area
- Metro Planning Area
- San Fernando Planning Area
- Santa Clarita Valley Planning Area
- Santa Monica Mountains Planning Area
- South Bay Planning Area
- West San Gabriel Valley Planning Area
- Westside Planning Area

Figure 5.1 Planning Areas Framework Map

The General Plan provides goals and policies to achieve countywide planning objectives for the unincorporated areas, and serves as the foundation for all community-based plans, such as area plans, community plans, and coastal land use plans. Area plans focus on land use and policy issues that are specific to the planning area. Community plans cover smaller geographic areas within the planning area, and address neighborhood and/or community-level policy issues. Coastal land use plans are components of local coastal programs, and regulate land use and establish policies to guide development in the coastal zone.

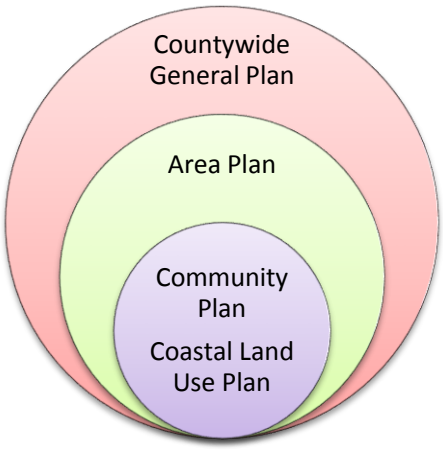
Figure 5.2 shows the relationship of the General Plan to community-based plans. All community-based plans are components of the General Plan and must be consistent with General Plan goals and policies.

The following is a list of community-based plans:

- Altadena Community Plan (adopted 1986)

- Antelope Valley Area Plan (adopted 1986)
- East Los Angeles Community Plan (adopted 1978; amended 1988)
- Hacienda Heights Community Plan (adopted 1978; amended 2011)
- Marina Del Rey Coastal Land Use Plan (adopted; certified Local Coastal Program 1996, amended 2012)
- Malibu Coastal Land Use Plan (adopted 1986)
- Rowland Heights Community Plan (adopted 1981)
- Santa Monica Mountains North Area Plan (adopted 2000)
- Santa Catalina Island Coastal Land Use Plan (adopted; certified Local Coastal Program 1983)
- Santa Clarita Valley Area Plan (adopted 1984; amended 2012)
- Twin Lakes Community Plan (adopted 1991)
- Walnut Park Neighborhood Plan (adopted 1987)
- West Athens-Westmont Community Plan (adopted 1990)

Figure 5.2: Relationship of General Plan to Community-Based Plans



Planning Areas Framework Implementation

An area plan will be prepared or updated for each of the 11 planning areas. The unique characteristics and needs of each of the planning areas will guide the development of each area plan. Area plans provide opportunities to update community-based plans, as well as implementation tools of the General Plan, such as specific plans and community standards districts. For more information, see Program LU-1: Planning Areas Framework Program in Chapter 16: General Plan Implementation Programs.

II. Planning Areas Descriptions

The following are profiles of the 11 planning areas. They include the identification of opportunity areas, which should be considered for further study when preparing community-based plans. The opportunity areas are described in Table 5.1.

Table 5.1: Opportunity Area Types

Transit Centers	Areas that are supported by major public transit infrastructure. Transit centers are identified based on opportunities for a mix of higher intensity development, including multifamily housing, employment and commercial uses; infrastructure improvements; access to public services and infrastructure; playing a central role within a community; or the potential for increased design, and improvements that promote living streets and active transportation, such as trees, lighting, and bicycle lanes.
Neighborhood Centers	Areas with opportunities suitable for community-serving uses, including commercial only and mixed-use development that combine housing with retail, service, office and other uses. Neighborhood centers are identified based on opportunities for a mix of uses, including housing and commercial; access to public services and infrastructure; playing a central role within a community; or the potential for increased design, and improvements that promote living streets and active transportation, such as street trees, lighting, and bicycle lanes.
Corridors	Areas along boulevards or major streets that provide connections between neighborhoods, employment and community centers. Corridors are identified based on opportunities for a mix of uses, including housing and commercial; access to public services and infrastructure; playing a central role within a community; or the potential for increased design, and improvements that promote living streets and active transportation, such as trees, lighting, and bicycle lanes.
Industrial Flex Districts	Industrial areas that provide opportunities for non-industrial uses and mixed uses, where appropriate, and also light industrial or office/professional uses that are compatible with residential uses.
Industrial Opportunity Areas	Economically viable industrial and employment-rich lands located in an unincorporated community that has an adopted community-based plan. It is highly recommended that during the update of the community-based plan, these areas be mapped as Employment Protection Districts, where industrial zoning and industrial land use designations should remain, and where policies to protect industrial land from other uses (residential and commercial) should be enforced.
Rural Town Centers	Focal points of rural communities, serving the daily needs of residents and providing local employment opportunities. Rural town centers are identified based on the opportunities for new public facilities and new commercial uses.

1. Antelope Valley Planning Area

Figure 5.3: Antelope Valley Planning Area Map

Planning Area Profile

Location

The Antelope Valley is located approximately 60 miles north of Downtown Los Angeles. The unincorporated portion of the Antelope Valley Planning Area covers 1,800 square miles, or 44 percent of the 4,083 square miles in the County. The unincorporated Antelope Valley surrounds the City of Palmdale and City of Lancaster, and borders San Bernardino County to the east, Ventura County to the west, and Kern County to the north. The Planning Area is shown in Figure 5.3.

Population and Housing

Table 5.2: Antelope Valley Planning Area Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	382,868	73,488	19%
Housing Units	125,317	26,939	21%

Source: 2010 U.S. Census

Table 5.3: Antelope Valley Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	51,555	70%
Black or African American	4,505	6%
American Indian and Alaska Native	887	1%
Asian	1,475	2%
Native Hawaiian and Other Pacific Islander	132	0%
Some Other Race	11,692	16%
Two or More Races	3,242	4%
Total	73,488	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	27,069	37%
Not Hispanic or Latino	46,419	63%
Total	73,488	100%

Source: 2010 U.S. Census

Geography

The Planning Area contains many diverse vegetative communities, geologic forms and climatic conditions. The Angeles National Forest, and the Liebre and Sierra Pelona mountain ranges, are located in the Planning Area. The main land feature is the high desert, with elevations between 2,300 and 2,400 feet above sea level. The Planning Area contains the majority of active agricultural land uses in Los Angeles County. The Antelope Valley Significant Ecological Area (SEA), San Andreas SEA, Joshua Tree Woodlands SEA, and Santa Clara River SEA also cover large portions of the Planning Area. The San Andreas Seismic Fault Zone, which cuts across the Planning Area, poses significant hazards. In addition, a significant portion of the Planning Area faces threats of wildfires and floods.

Transportation Infrastructure

Two major freeways provide access to the Planning Area: Interstate-5, which is located in the western portion of the Planning Area, and links Northern and Southern California; and State Route-14, which connects the adjacent Santa Clarita Valley just north of metropolitan Los Angeles, to the eastern portion of the Antelope Valley. The High Desert Corridor project will connect State Route-14 with State Route-18 in San Bernardino County, and promote connectivity, traffic safety and goods movement.

In addition, Metrolink's Antelope Valley Line has three station stops in the Antelope Valley, which are located in unincorporated Acton, the City of Palmdale, and the City of Lancaster. Palmdale Regional Airport, General William J. Fox Airfield and Edwards Air Force Base are also located in the unincorporated Antelope Valley. Antelope Valley Transit Authority includes four local routes, two special routes, and three commuter routes that connect the Antelope Valley to other areas.

Planning Area Issues

The Planning Area is predominately rural and has major constraints, including natural hazards, environmental issues, lack of infrastructure, and limited water supply. It is critical that existing rural communities, agriculture, natural resources, and biological diversity remain protected. In addition, incorporating water conservation strategies and encouraging the recycling of water is important.

As thousands of acres of desert lands have been subdivided over the past decade, the population of the Planning Area has increased significantly. While much of the growth has been at urban densities in and adjacent to the City of Palmdale and the City of Lancaster, the desirability of rural living and the availability of affordable housing have led to significant growth in the many unincorporated communities. In turn, many residents have had to commute further distances to access employment opportunities.

Figure 5.4: Opportunity Areas Map—Acton

Figure 5.5: Opportunity Areas Map—Antelope Acres

Figure 5.6: Opportunity Areas Map—Lake Hughes

Figure 5.7: Opportunity Areas Map—Lake Los Angeles

Figure 5.8: Opportunity Areas Map—Leona Valley

Figure 5.9: Opportunity Areas Map—Littlerock

Figure 5.10: Opportunity Areas Map—Pearblossom

Figure 5.11: Opportunity Areas Map—Quartz Hill

Figure 5.12: Opportunity Areas Map—Roosevelt

Figure 5.13: Opportunity Areas Map—Sun Village

The opportunity areas in the Planning Area are rural town centers, as shown in Figures 5.4-5.13.

2. Coastal Islands Planning Area

Figure 5.14: Coastal Islands Planning Area Map

Planning Area Profile

Location

San Clemente Island lies approximately 63 miles south of the City of Long Beach and 78 miles west of the City of San Diego. San Clemente Island is approximately 24 miles long and 5 miles across at its widest point. It has a land area of approximately 57 square miles. Since 1934, San Clemente Island has been owned and operated by the U.S. Navy. More than a dozen range and operational areas are clustered within a 60 mile radius of San Clemente Island. The Commander-in-Chief U.S. Pacific Fleet (CINCPACFLT) is the major claimant for San Clemente Island, and Naval Air Station North Island (NASNI) is responsible for its administration.

Santa Catalina Island is the only significantly inhabited island near the California coast. It is located approximately 22 miles south of the Palos Verdes Peninsula and 27 miles southwest of the Orange County shoreline. Santa Catalina Island is approximately 21 miles long and 8 miles wide. It has a land area of approximately 74 square miles.

The Coastal Islands Planning Area is shown in Figure 5.14.

Population and Housing

Table 5.4: Coastal Islands Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	4,096	368	9%
Housing Units	2,483	217	9%

Source: 2010 U.S. Census

Table 5.5: Coastal Islands Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	300	82%
Black or African American	4	1%
American Indian and Alaska Native	4	1%

Asian	9	2%
Native Hawaiian and Other Pacific Islander	0	0%
Some Other Race	37	10%
Two or More Races	14	4%
Total	368	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	72	20%
Not Hispanic or Latino	296	80%
Total	368	100%

Source: 2010 U.S. Census

Geography

Santa Catalina Island is characterized by its rugged landscape and a cliffed shoreline. Level terrain is limited to the floors of a few large coastal canyons, such as Avalon, Pebbly Beach, White's Landing, Middle Ranch, Two Harbors, and Emerald Bay. Mt. Orizaba, which is located in the central part of Santa Catalina Island, is the highest peak with an elevation of 2,069 feet.

Transportation Infrastructure

The City of Avalon and the unincorporated community of Two Harbors are the major ports of entry to Santa Catalina Island, and are the primary communities on Santa Catalina Island in terms of population and services. The actual roadway distance is 26 miles through rugged terrain, with an average driving time of 1 hour and 15 minutes. In addition, Santa Catalina Island is accessed via ferry or plane. Santa Catalina Island includes the Santa Catalina Island Airport. Roads in the unincorporated areas of Santa Catalina Island are privately-owned, and access is restricted.

Planning Area Issues

San Clemente Island supports a number of endemic species as well as other species of special interest, which have experienced a resurgence with the Navy's restoration efforts. Land use activities on the Island are regulated by the U.S. Navy.

For Santa Catalina Island, the County and the Santa Catalina Island Company signed a 50-year Open Space Easement Agreement in 1974, which calls for the preservation of Santa Catalina Island's natural character, and improvements to access and recreational opportunities. The Santa Catalina Island Local Coastal Program (LCP), which was adopted in 1983, implements the goals and requirements of this agreement and ensures that the vast majority of Santa Catalina Island remains in its natural state for future generations to enjoy. The LCP provides multiple policies to improve

access to and increase the range of recreational and open space activities, as well as to preserve, protect and conserve Santa Catalina Island's open space and natural resources.

3. East San Gabriel Valley Planning Area

Figure 5.15: East San Gabriel Valley Planning Area Map

Planning Area Profile

Location

The East San Gabriel Valley Planning Area contains the easternmost areas of Los Angeles County, and is located south of the Angeles National Forest, north of the Orange County border, and east of Interstate-605. The Planning Area's eastern border is the San Bernardino County line. The East San Gabriel Valley Planning Area is shown in Figure 5.15.

Population and Housing

Table 5.6: East San Gabriel Valley Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	933,116	234,251	25%
Housing Units	275,604	63,357	23%

Source: 2010 U.S. Census

Table 5.7: East San Gabriel Valley Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	102,440	44%
Black or African American	4,362	2%
American Indian and Alaska Native	1,791	1%
Asian	61,297	26%
Native Hawaiian and Other Pacific Islander	342	0%
Some Other Race	55,603	24%
Two or More Races	8,416	4%
Total	234,251	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	136,104	58%
Not Hispanic or Latino	98,147	42%
Total	234,251	100%

Source: 2010 U.S. Census

Geography

The Planning Area's geography is characterized by valleys and rolling, dry hills. The San Gabriel River runs along the Interstate-610 and the western boundary of the Planning Area. The Puente Hills form the southern border for the Planning Area, and include natural areas and recreational opportunities for the region. The northern portion of the Planning Area is characterized by the steep upgrade and urban-wildland interface with the Angeles National Forest and San Gabriel Mountains.

Transportation Infrastructure

The Planning Area is served by Interstate-10, Interstate/State Route-210 and State Route-60, which provide east-west access and the Interstate-605 and State Route-57, which provide north-south access. The Planning Area is also served by the Metrolink commuter rail Riverside and San Bernardino lines, and Foothill Transit local and regional bus services.

Planning Area Issues

The primary constraints in the Planning Area are a growing shortage of large blocks of developable land and worsening traffic congestion. Many of the traditional suburbs within the Planning Area are maturing and facing infrastructure capacity issues and limited mobility options. Specifically, solid waste and sewerage disposal are concerns. In addition, portions of the City of Diamond Bar, City of Pomona, City of San Dimas, City of Walnut, and the unincorporated areas are on septic systems, which are subject to failure and potential groundwater contamination if not properly maintained. Transportation improvements will be critical for the long-term economic health of the Planning Area. Traffic on the major east-west freeways, including the Interstate-10, Interstate-210 and State Route-60, is heavily congested during peak hours, with commuters generally traveling west in the morning for work and east in the evening to return home.

The Planning Area also includes environmental and hazard constraints. The Puente Hills, which include portions of Rowland Heights and Hacienda Heights, contain fault traces and wildfire threats. Wildfires and landslides also pose safety hazards in the foothill communities. In addition, the Planning Area contains SEAs.

Opportunity Areas

Figure 5.16: Opportunity Area Map—Avocado Heights

A portion of Valley Boulevard in Avocado Heights, which is located between Temple Avenue and Vineland Avenue, is identified as an Industrial Flex District. This area is shown in Figure 5.16.

Although these parcels are currently used for industrial purposes, the shallow parcel sizes will make it difficult for any future high-use industrial redevelopment. There is an opportunity to encourage the development of this area as a supportive commercial use district to adjacent, high-employment work sites.

Figure 5.17: Opportunity Area Map—Charter Oak

Figure 5.17 identifies a corridor opportunity area along Arrow Highway in Charter Oak. Arrow Highway is a major thoroughfare that extends across many local jurisdictions in the San Gabriel Valley, including unincorporated areas. In the community of Charter Oak, Arrow Highway includes mostly residential and a few commercial land uses, and has the potential for improved street and pedestrian improvements. In 2008, SCAG conducted a study on multi-jurisdictional corridor planning that analyzed Arrow Highway. The purpose of the study was to develop strategies to improve multi-jurisdictional coordination, transportation linkages, economic development, and overall street design and amenities.

4. Gateway Planning Area

Figure 5.18: Gateway Planning Area Map

Planning Area Profile

Location

The Gateway Planning Area is located in the southeastern portion of Los Angeles County. The eastern border of the Planning Area is the Orange County line. The Planning Area contains a number of cities, including the City of Long Beach, as well as a large corridor of industrial areas that lead out of the ports of Los Angeles and Long Beach into Downtown Los Angeles. Unincorporated Rancho Dominguez consists primarily of industrially-designated land. The Gateway Planning Area is shown in Figure 5.18.

Population and Housing

Table 5.8: Gateway Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	1,666,588	103,094	6%
Housing Units	523,365	29,586	6%

Source: 2010 U.S. Census

Table 5.9: Gateway Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	61,748	60%
Black or African American	2,477	2%
American Indian and Alaska Native	1,265	1%
Asian	4,049	4%
Native Hawaiian and Other Pacific Islander	241	0%
Some Other Race	29,029	28%
Two or More Races	4,285	4%

Total	103,094	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	76,782	74%
Not Hispanic or Latino	26,312	26%
Total	103,094	100%

Source: 2010 U.S. Census

Geography

The Planning Area is built out, and has a large percentage of industrial land. The Los Angeles River and San Gabriel River flow through the Planning Area.

Transportation Infrastructure

Interstate-710, which is the primary trucking route for cargo moving to and from the ports of Los Angeles and Long Beach, has increasingly become congested. Projects, such as the Alameda Corridor, demonstrate the importance of inter-jurisdictional efforts to aid in the region's economic development. The Planning Area is also bisected by the Interstate-405, State Route-91, Interstate-5, and Interstate-105. The Port of Long Beach, which combined with the Port of Los Angeles in the South Bay Planning Area, is the busiest container port in the country, creates high volumes of truck and cargo traffic in the Planning Area along Interstate-710. The region is served by Metro and Metrolink rail service.

Planning Area Issues

Industrial uses and trade and logistics from the ports are an important part of the economy of Planning Area; however, the concentration of industrial uses and high truck traffic raises concerns over air and water pollution. As a large economic center with high-wage jobs, it is important to balance environmental and economic concerns in the Planning Area.

The Planning Area also suffers from a lack of parks and recreational opportunities. In certain communities, there is also a lack of multifamily housing opportunities and the need for revitalization.

Opportunity Areas

Figure 5.19: Opportunity Areas Map—Rancho Dominguez

In the industrial community of Rancho Dominguez, the area around the Del Amo Station for the Metro Blue Line can be used to encourage a transit-oriented jobs district, where employees can commute to work using the Metro. This transit center opportunity area is depicted in Figure 5.19.

Figure 5.20: Opportunity Areas Map—West Whittier-Los Nietos

Whittier Boulevard in West Whittier-Los Nietos, which is shown in Figure 5.20, is a major commercial corridor in which recent streetscape improvements have reactivated the street and can spur future redevelopment opportunities.

Figure 5.21: Opportunity Areas Map – Rowland Heights

The industrial parcels in Rowland Heights, as shown in Figure 5.21, are fully utilized for industrial purposes and are surrounded by parcels with similarly heavy industrial uses in the City of Industry. This is viable industrial land that should be protected.

Figure 5.22: Opportunity Areas Map – Hacienda Heights

The industrial parcels in Hacienda Heights, as shown in Figure 5.22, lie adjacent to heavily industrial districts in the City of Industry to the north. These parcels are being fully utilized for industrial purposes and should remain industrially zoned.

5. Metro Planning Area

Figure 5.23: Metro Planning Area Map

Planning Area Profile

Location

The Metro Planning Area is located in the geographic center of Los Angeles County. The Planning Area is home to and heavily defined by its proximity to Downtown Los Angeles, which includes major corporations and professional firms, tourist and convention hotels, restaurants, retail, and the largest concentration of government offices outside of Washington D.C. The Planning Area is shown in Figure 5.23.

Population and Housing

Table 5.10: Metro Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	1,819,084	306,768	17%
Housing Units	586,832	79,236	14%

Source: 2010 U.S. Census

Table 5.11: Metro Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	118,358	39%
Black or African American	46,725	15%
American Indian and Alaska Native	3,000	1%
Asian	1,829	1%
Native Hawaiian and Other Pacific Islander	332	0%
Some Other Race	126,439	41%
Two or More Races	10,085	3%
Total	306,768	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	254,135	83%
Not Hispanic or Latino	52,633	17%
Total	306,768	100%

Source: 2010 U.S. Census

Geography

The majority of the Planning Area is urbanized, with little variation in elevation. There are no large areas of natural open space. All open space areas are contained with parks and recreational areas. The Los Angeles River and the Compton Creek tributary flow through the Planning Area. These waterways provide an opportunity for enhancement and serve as community assets.

Transportation Infrastructure

The Planning Area is rich in bus services and rail transit. The Metro Blue Line traverses South Los Angeles on a north-south route, with stops in Willowbrook and three stops in Florence-Firestone. The Metro Green Line travels east-west along the Interstate-105, with stops in Willowbrook, Westmont-West Athens, and Lennox. Furthermore, the Metro Gold Line runs along the Third Street corridor in unincorporated East Los Angeles.

Planning Area Issues

The presence of industrial districts in the Planning Area provides a strong foundation for job recovery and job growth, and opportunities for transit-oriented development. The Planning Area also includes a heavily transit-dependent population. However, the Planning Area also faces a number of challenges for mobility, including traffic congestion and the need for improved pedestrian safety and more bicycle facilities. Communities in the Planning Area are urbanized and are generally characterized by challenging physical and economic conditions. In terms of land use, several residential communities abut industrial uses, which create land use compatibility conflicts. The Planning Area, in particular, faces issues of overcrowding. In addition, the Planning Area contains very few natural areas and open spaces. Although infill opportunities exist, many sites have a combination of environmental issues that affect their redevelopment potential. Much of the South Los Angeles is characterized by economically disadvantaged conditions that further hamper private investment and redevelopment. Public investment in redevelopment activities will be an important factor in the economic turnaround of South Los Angeles. For example, many opportunities exist for public-private partnerships to revitalize many of the older, commercial corridors with pedestrian amenities and mixed uses. There are also opportunities along the Metro Gold Line through East Los Angeles.

Opportunity Areas

Figure 5.24: Opportunity Areas Map—East Los Angeles

East Los Angeles is an older, urban community that is rich in history and culture. The community's transit center opportunity area, depicted in Figure 5.24, covers an area along 3rd Street and includes four transit stations along the Metro Gold Line. This area is ripe for complete street improvements, as well as pedestrian-scale and mixed use development that incorporate local commercial-serving uses and multifamily housing. In addition, Figure 5.24 also depicts the Industrial Opportunity Areas and Industrial Flex Districts in the East Los Angeles.

Figure 5.25: Opportunity Areas Map—East Rancho Dominguez

The Planning Area has opportunities for future planning efforts to improve its economic health. As shown in Figure 5.25, Atlantic Avenue and East Compton Boulevard are major commercial corridors with local-serving uses in the community of East Rancho Dominguez.

Figure 5.26: Opportunity Areas Map—Florence-Firestone

Florence-Firestone is home to many opportunity areas, which are depicted in Figure 5.26. Central Avenue, which was once a hub of jazz culture, is in need of investment and redevelopment. The three-mile corridor is along the western border of Florence-Firestone, and abuts the City of Los Angeles. The northern portion of the corridor is comprised of industrial and auto-related uses, and the southern portion of the corridor is predominantly commercial and residential. An abundant amount of vacant and underutilized land, coupled with the City of Los Angeles' efforts in the corridor, and the location of the Slauson, Florence and Firestone stations for the Metro Blue Line, make the area prime for transit-oriented development and economic revitalization.

Figure 5.27: Opportunity Areas Map—Walnut Park

Figure 5.27 identifies the opportunity areas in the community of Walnut Park. Florence Avenue and Pacific Boulevard are active local commercial corridors that border the City of Huntington Park and the City of South Gate. The area supplies much of the retail, restaurants and services to the residents who live nearby. These corridors are considered opportunity areas because of their proximity to the Florence Station for the Metro Blue Line and the opportunity for increased design, pedestrian and bicyclist improvements, such as street trees, lighting and bicycle lanes.

Figure 5.28: Opportunity Areas Map—West Athens-Westmont

The transit center around the Vermont Station for the Metro Green Line in West Athens-Westmont, as identified in Figure 5.28, presents an opportunity to capitalize on infrastructure investments in a community with high ridership. Vermont Avenue has the potential for increased economic vitality through the creation of employment-rich activities along the commercial corridors that are adjacent to the Metro station. In addition, the residential areas within the transit center would benefit from increased pedestrian amenities and design improvements. The width of Vermont Avenue, in particular, provides major opportunities for pedestrian and bicyclist improvements. Imperial Highway also connects the transit center opportunity area to the areas around the intersection of Western Avenue and Imperial Highway, which provide additional opportunities for design improvements.

Figure 5.29: Opportunity Areas Map—West Rancho Dominguez-Victoria

The intersection of El Segundo Boulevard and Avalon Boulevard in West Rancho Dominguez-Victoria, as shown in Figure 5.29, has the potential to become an active local neighborhood center.

The surrounding community is rich with public amenities, such as the Earvin Magic Johnson Park and the A.C. Bilbrew Library. In addition, the area has many multifamily sites, as well as vacant and underutilized commercial sites along El Segundo Boulevard.

Figure 5.30: Opportunity Areas Map—Willowbrook

Significant opportunities exist in Willowbrook, particularly in the area surrounding the Martin Luther King, Jr. Multi-Service Ambulatory Care Center (MLK-MACC), as identified in Figure 5.30. The rehabilitation and reuse of the site could be a catalyst for further redevelopment. Neighborhood amenities that support healthcare services and office uses, as well as connectivity with the nearby Rosa Parks Metro Blue/Green Line Station will be important factors in future planning activities in the area.

6. San Fernando Valley Planning Area

Figure 5.31: San Fernando Valley Planning Area Map

Planning Area Profile

Location

The San Fernando Valley Planning Area is bordered by the Santa Clarita Valley and the Angeles National Forest to the north, and the Santa Monica Mountains Planning Area and Westside Planning Area to the south. The Ventura County line is the western border of the Planning Area, and the San Gabriel Valley and Downtown Los Angeles make up the eastern border. The San Fernando Valley Planning Area is shown in Figure 5.31.

Population and Housing

Table 5.12: San Fernando Valley Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	1,768,978	24,790	1%
Housing Units	637,906	9,545	1%

Source: 2010 U.S. Census

Table 5.13: San Fernando Valley Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	16,662	67%
Black or African American	290	1%
American Indian and Alaska Native	105	0%
Asian	5,873	24%
Native Hawaiian and Other Pacific Islander	20	0%
Some Other Race	854	3%
Two or More Races	986	4%

Total	24,790	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	3,350	14%
Not Hispanic or Latino	21,440	86%
Total	24,790	100%

Source: 2010 U.S. Census

Geography

The San Fernando Valley Planning Area has several distinguishing geographic characteristics. Almost the entire Planning Area is ringed with distinct hillsides and mountain ranges, including the Santa Susana Mountains to the northwest, the Simi Hills to the west, the Santa Monica Mountains and Chalk Hills to the south, the Verdugo Mountains to the east, and the San Gabriel Mountains to the northeast. Looking southeast, highrises from Downtown Los Angeles can be seen from some neighborhoods, passes, and parks in the San Fernando Valley.

The Los Angeles River begins at the confluence of Calabasas Creek and Bell Creek and flows eastward along the southern regions of the Planning Area. One of the Los Angeles River's two unpaved sections can be found at the Sepulveda Basin. The seasonal river, the Tujunga Wash, drains much of the western facing San Gabriel Mountains, and passes through the Hansen Dam Recreation Center in Tujunga, south along the Verdugo Mountains, through the eastern communities of the Planning Area to join the Los Angeles River in Studio City. Mulholland Drive, which runs along the ridgeline of the Santa Monica Mountains, marks the boundary between the Planning Area and Hollywood and the westside of the City of Los Angeles.

Transportation Infrastructure

The development pattern in the Planning Area is almost exclusively suburban, and driving is the dominant mode of transportation. Several freeways cross the Planning Area, most notably, Interstate-405, U.S. Route-101, State Route-118, and Interstate-5. The Planning Area includes the Universal City Station and North Hollywood Station along the Metro Red Line. The Metro Orange Line, which is an east-west rapid transit busway, connects the North Hollywood Station to points west of the Planning Area. Two Metrolink commuter rail lines connect the Planning Area to Downtown Los Angeles. Amtrak's Pacific Surfliner has stations at Burbank Airport, Van Nuys and Chatsworth. Several Metro Rapid bus lines also serve the area.

Planning Area Issues

Only a small portion of the Planning Area is unincorporated. These communities are primarily low-density, suburban communities, with the exception of the Universal Studios Specific Plan area, and Oat Mountain, which is primarily vacant land except for utility facilities. Many of these communities are near environmentally-sensitive and hazardous areas. One of the main hazards facing these communities is wildfires. Sylmar Island, Lopez Canyon, Kagel Canyon, and large portions of La Crescenta–Montrose, Oat Mountain, Westhills, and the Universal Studios Specific Plan area are located within Very High Fire Hazard Severity Zones. In addition, portions of the Planning Area

include SEAs. Economic challenges facing the Planning Area include an ongoing decline in manufacturing jobs, a shortage of new or improved industrial and office space, and worsening traffic congestion.

Opportunity Areas

Figure 5.32: Opportunity Area—La Crescenta-Montrose Map

Foothill Boulevard in La Crescenta-Montrose, as shown in Figure 5.32, is an active local commercial corridor. The corridor supplies much of the retail, restaurants and services to nearby residents. This corridor is considered an opportunity area for increased design, pedestrian and bicyclist improvements, such as street trees, lighting and bicycle lanes.

7. Santa Clarita Valley Planning Area

Figure 5.33: Santa Clarita Valley Planning Area Map

Planning Area Profile

Location

The Santa Clarita Planning Area is bordered to the west by the Ventura County line, to the north by the Los Padres National Forest and Angeles National Forest, to the east by the Angeles National Forest, and to the south by a major ridgeline that separates the Santa Clarita Valley from the San Fernando Valley. The Planning Area includes over 480 square miles, of which about 195 square miles are unincorporated. The Planning Area is located approximately 30 to 40 miles northwest of Downtown Los Angeles. The Santa Clarita Valley Planning Area is shown in Figure 5.33.

Population and Housing

Table 5.14: Santa Clarita Valley Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	271,227	94,907	35%
Housing Units	91,094	29,039	32%

Source: 2010 U.S. Census

Table 5.15: Santa Clarita Valley Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	58,135	61%
Black or African American	6,283	7%
American Indian and Alaska Native	464	0%
Asian	13,230	14%
Native Hawaiian and Other Pacific Islander	135	0%
Some Other Race	12,001	13%
Two or More Races	4,659	5%
Total	94,907	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	26,041	27%
Not Hispanic or Latino	68,866	73%
Total	94,907	100%

Source: 2010 U.S. Census

Geography

The Planning Area is framed by the San Gabriel, Santa Susana, and Sierra Pelona mountain ranges, and the Angeles National Forest. The Santa Clara River flows from east to west from its headwaters near Acton to the Pacific Ocean. The Planning Area contains multiple geographic constraints to development, including large swaths of land that are covered by steep hillsides, SEAs, and Very High Fire Hazard Severity Zones.

Transportation Infrastructure

The Planning Area is located at the convergence of several major transportation and utility facilities. The Southern Pacific Railroad, Interstate-5 and State Route-14, and two major aqueducts traverse the Planning Area. In addition, the Metrolink Antelope Valley Line has three station stops, which are located in the City of Santa Clarita. The Agua Dulce Airport is also located in the unincorporated community of Agua Dulce. Additionally, major oil, natural gas, and power lines transect the Planning Area.

Planning Area Issues

Despite the sensitive and hazardous environment, the Planning Area is one of the fastest growing areas in Los Angeles County. In the last 10 years, approximately 33,500 housing units have been approved in the unincorporated portions of the Planning Area. Due to this rapid growth, the Planning Area faces multiple challenges related to infrastructure planning, preservation of open space and biological diversity, jobs-housing balance, reducing vehicle miles traveled, and coordination of public services and facilities.

8. Santa Monica Mountains Planning Area

Figure 5.34: Santa Monica Mountains Planning Area Map

Planning Area Profile

Location

The Santa Monica Mountains Planning Area covers the scenic Santa Monica Mountains and the shoreline along the Pacific Coast to the Ventura County line to the north and west, and up to the San Fernando Valley to the north. The eastern border is the Westside Planning Area and the City of Los Angeles. Some of the unincorporated communities within the Planning Area include: Malibou Lake, Monte Nido, Malibu Vista, Old Topanga, and Topanga. The Santa Monica Mountains Planning Area is shown in Figure 5.34.

Population and Housing

Table 5.16: Santa Monica Mountains Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	85,785	19,222	22%
Housing Units	34,529	7,081	21%

Source: 2010 U.S. Census

Table 5.17: Santa Monica Mountains Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	16,524	86%
Black or African American	440	2%
American Indian and Alaska Native	72	0%
Asian	1,015	5%
Native Hawaiian and Other Pacific Islander	11	0%
Some Other Race	418	2%
Two or More Races	742	4%

Total	19,222	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	1,551	8%
Not Hispanic or Latino	17,671	92%
Total	19,222	100%

Source: 2010 U.S. Census

Geography

The Planning Area provides recreational opportunities, such as hiking, bicycling, birding, horseback riding, swimming and camping, on county, federal, and state parks and beaches, as well as privately-held conservancy land. The Santa Monica Mountains contain many environmentally sensitive areas.

Transportation Infrastructure

U.S. Route-101 and the Pacific Coast Highway (Highway 1) are the two major roads that serve the Planning Area. There are many scenic roads throughout the Planning Area, two of which are state-designated scenic corridors: two portions of Mulholland Highway and the Malibu Canyon-Las Virgenes Highway.

Planning Area Issues

The Planning Area's natural beauty comes with multiple environmental issues and numerous natural hazards. The Planning Area contains an SEA and SERAs. Development pressures, particularly in the Santa Monica Mountains, sometimes result in a conflict between habitat protection and development. Maintaining recreational areas, protecting environmentally-sensitive lands, expanding public access to the coast, and protecting residents from natural hazards are priorities in the Santa Monica Mountains Planning Area. In addition, a majority of the Planning Area is designated a Very High Fire Hazard Severity Zone. The Santa Monica Mountains are frequently struck by wildfires, which threaten the safety of people living along the Mountains' winding, narrow roads, which are often in very isolated locations. The Santa Monica Mountains are also subject to slope failure due to their geology and steep topography, particularly during rainstorms. Wildfire threats combined with limited road access pose dangers for area residents.

9. South Bay Planning Area

Figure 5.35: South Bay Planning Area Map

Planning Area Profile

Location

The South Bay Planning Area is located in the southwest corner of Los Angeles County. The Pacific Ocean provides the western border and the Gateway Planning Area and Metro Planning Area provide the eastern and northern borders. The Westside Planning Area lies directly north of the Planning Area. The South Bay Planning Area is shown in Figure 5.35.

Population and Housing

Table 5.18: South Bay Planning Area, Population and Housing, 2010

	Entire Planning Area	Unincorporated Area	Percentage Unincorporated
Population	1,016,674	69,612	7%
Housing Units	373,187	21,348	6%

Source: 2010 U.S. Census

Table 5.19: South Bay Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	29,592	43%
Black or African American	4,711	7%
American Indian and Alaska Native	539	1%
Asian	10,133	15%
Native Hawaiian and Other Pacific Islander	697	1%
Some Other Race	20,508	29%
Two or More Races	3,432	5%
Total	69,612	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	40,504	58%
Not Hispanic or Latino	29,108	42%
Total	69,612	100%

Source: 2010 U.S. Census

Geography

The majority of the Planning Area is comprised of low-level areas of the Los Angeles basin. The Palos Verde Peninsula is covered with hills, open spaces and communities that abut cliffs and rocky shorelines along the Pacific Coast.

Transportation Infrastructure

The Planning Area is served mainly by four major freeways: Interstate-105, Interstate-405, Interstate-110, and State Route-91. The Metro Green Line also serves the Planning Area. Other transportation facilities in the region include Torrance Municipal Airport-Zamperini Field and Hawthorne Municipal Airport. The Los Angeles International Airport (LAX) is located in the northern portion of the Planning Area. The Port of Los Angeles is also located in the Planning Area.

Planning Area Issues

Issues facing the Planning Area include traffic congestion, limited public transportation options, air quality concerns, and a lack of developable land. Also, due to the region's proximity and inclusion of major transportation hubs—LAX and the ports of Long Beach and Los Angeles—goods movement has become an important part of the Planning Area's economy. However, goods movement also creates planning and environmental challenges. While physical infrastructure improvements are needed to ensure that freeways and streets are adequate to serve increased truck volumes, the massive increase in cargo volume has created significant air pollution impacts to neighboring communities. In addition, petroleum refining is a significant source of air pollution in the region.

Although manufacturing still plays an important role in the region's economy, certain communities have witnessed a decline in manufacturing/industrial uses in recent years. This creates both brownfield redevelopment potential and land use planning challenges. For instance, in unincorporated West Carson, abandoned industrial sites have been redeveloped into multifamily residential uses, which creates land use incompatibility between the new high-density residential developments and the adjacent active industrial uses. The Planning Area's proximity to LAX, one of the busiest airports in the world, also creates a unique land use planning challenge to the region. Neighboring communities, including unincorporated Lennox and Del Aire, will need to continue their efforts to mitigate the noise impacts generated by aircraft on predominately lower density residential areas.

Opportunity Areas

Figure 5.36: Opportunity Area Map—Alondra Park

The Crenshaw Boulevard corridor, depicted in Figure 5.36, only covers a small portion of Alondra Park, but includes a range of commercial uses and has potential for pedestrian-scale and mixed use development. In addition, Alondra Park is home to El Camino Community College, which makes this corridor an important connector for commuting students, faculty and staff. Future planning efforts must be closely coordinated with the City of Gardena, which has jurisdiction over the eastern portion of Crenshaw Boulevard.

Figure 5.37: Opportunity Area Map—Del Aire

The Del Aire opportunity area includes the Aviation/LAX Station on the Metro Green Line and a corridor along Inglewood Avenue. As shown in Figure 5.37, the transit center around the Metro station provides opportunities to activate the land uses adjacent to the station and provide design improvements, including pedestrian and bicycle amenities. Inglewood Avenue, as an existing commercial corridor with a mix of uses, including neighborhood-serving businesses, also provides opportunities for mixed use development, as well as design improvements for pedestrians and bicyclists.

Figure 5.38: Opportunity Area Map—Lennox

The Metro Green Line also includes the Hawthorne Station in Lennox. As shown in Figure 5.38, the corridor along Hawthorne Boulevard and the area at the intersection of Hawthorne Boulevard and Lennox Boulevard, within the transit center, provide opportunities for mixed uses, as well as design improvements.

Figure 5.39: Opportunity Area Map—West Carson

West Carson is home to many opportunity areas in the South Bay Planning Area, which are identified in Figure 5.39. Portions of West Carson have undergone transition from a warehousing and distribution center servicing the Port of Los Angeles, to a higher density residential community impacted by the rapid growth of the nearby City of Torrance and City of Carson. An Industrial Flex District identifies an area with an opportunity for industrial uses to transition to non-industrial uses through future planning efforts. Harbor-UCLA Medical Center, also located in West Carson, is a major employer and activity center in the area. Planned future expansions of the medical facility, as well as its proximity to the Metro Silver Line, provide redevelopment and infill opportunities in the surrounding neighborhoods.

10. West San Gabriel Valley Planning Area

Figure 5.40: West San Gabriel Valley Planning Area Map

Planning Area Profile

Location

The Angeles National Forest is the northern border of the West San Gabriel Planning Area, while Downtown Los Angeles and the Gateway Planning Area make up the southern border. The eastern border of the Planning Area is roughly Interstate-605. The West San Gabriel Valley Planning Area is shown in Figure 5.40.

Population and Housing

Table 5.20: West San Gabriel Valley Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	895,543	103,181	12%
Housing Units	311,938	35,889	12%

Source: 2010 U.S. Census

Table 5.21: West San Gabriel Valley Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	47,748	46%
Black or African American	11,606	11%
American Indian and Alaska Native	619	1%
Asian	23,963	23%
Native Hawaiian and Other Pacific Islander	109	0%
Some Other Race	14,378	14%
Two or More Races	4,758	5%
Total	103,181	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	34,530	33%
Not Hispanic or Latino	68,651	67%
Total	103,181	100%

Source: 2010 U.S. Census

Geography

The Planning Area includes the San Gabriel Mountains and Angeles National Forest, and provides a large range of open space and recreational opportunities for area residents. The San Gabriel River flows north-south along the Planning Area's eastern border and Interstate-605. The Planning Area is almost entirely developed with historically suburban developments.

Transportation Infrastructure

Two major east-west freeways, Interstate-10 and Interstate/State Route-210, run through the Planning Area. In addition, the Metro Gold Line traverses the City of Pasadena and terminates adjacent to unincorporated East Pasadena-East San Gabriel. Metro has also approved the expansion of the Gold Line light rail to several communities in the Planning Area. Other available transit options include Foothill Transit, which operates multiple bus lines throughout the Planning Area. The El Monte Airport is also located in the Planning Area.

Planning Area Issues

The Planning Area is comprised of mature, suburban communities, including some in the foothills of the San Gabriel Mountains. Some of these communities contain environmental resources and others face hazardous constraints. Portions of the Altadena and San Gabriel Canyon SEAs cover the Planning Area. In addition, many of the foothill communities are designated Very High Fire Hazard Severity Zones, which reflects the increased threat of wildfires and subsequent mudslides within those areas.

Many of the unincorporated areas are isolated islands of almost entirely residential development. It is important to integrate these islands into the fabric of their surrounding communities, where many of the services and daily needs of the unincorporated residents are met.

Opportunity Areas

Figure 5.41: Opportunity Area Map—Altadena

Located in the heart of Altadena, Lake Avenue, between Altadena Drive and New York Drive, as shown in Figure 5.41, is a commercial corridor with various community-serving businesses, such as retail commercial, restaurants, services, and small professional offices.

Figure 5.42: Opportunity Area Map—East Pasadena-East San Gabriel

The intersection of Colorado Boulevard and Rosemead Boulevard in East Pasadena–East San Gabriel is an active local commercial center. Due to its proximity to the Sierra Madre Villa Station on the Metro Gold Line, this area has the opportunity for increased pedestrian and bicyclist improvements, as well as more transit-oriented developments. In addition, along Rosemead Boulevard, there is also a variety of retail commercial, restaurants, services and apartment complexes. This corridor is considered an opportunity area because it can serve as an extension of the transit center opportunity area, both of which are identified in Figure 5.42.

Figure 5.43: Opportunity Area Map—South Monrovia Islands

Although Live Oak Boulevard in unincorporated South Monrovia Islands only covers a few blocks, it is part of a major corridor that runs from the City of Arcadia to the west and the City of Irwindale to the east, as shown in Figure 5.43. The corridor provides much of the retail, restaurants and services to nearby residents. This corridor is considered an opportunity area for its potential for increased design, pedestrian and bicyclist improvements, such as street trees, lighting, and bicycle lanes.

11. Westside Planning Area

Figure 5.44: Westside Planning Area Map

Planning Area Profile

Location

The Westside Planning Area covers the coastal communities, including Marina Del Rey, the westside of the City of Los Angeles, and other small cities, such as the City of Santa Monica, City of Beverly Hills, and City of West Hollywood. The Westside Planning Area is shown in Figure 5.44.

Population and Housing

Table 5.22: Westside Planning Area, Population and Housing, 2010

	Planning Area	Unincorporated Area	Percentage Unincorporated
Population	974,646	27,407	3%
Housing Units	482,821	14,564	3%

Source: 2010 U.S. Census

Table 5.23: Westside Planning Area, Race and Ethnicity, 2010

Race	Unincorporated Area Population	Percentage
White	9,157	33%
Black or African American	14,981	55%
American Indian and Alaska Native	105	0%
Asian	1,236	5%
Native Hawaiian and Other Pacific Islander	18	0%
Some Other Race	572	2%
Two or More Races	1,338	5%
Total	27,407	100%

Ethnicity	Unincorporated Area Population	Percentage
Hispanic or Latino	1,907	7%
Not Hispanic or Latino	25,500	93%
Total	27,407	100%

Source: 2010 U.S. Census

Geography

The western portion of the Planning Area is comprised of a string of beaches and Marina Del Rey. The Planning Area contains one of the few remaining wetlands in Ballona Creek. The eastern portion of the Planning Area includes the Baldwin Hills and Kenneth Hahn State Park, which provide natural areas and recreational opportunities for area residents. Marina Del Rey is the largest, man-made small boat harbors in the country and is bounded by the City of Los Angeles.

Transportation Infrastructure

Opportunities for new development are being explored along planned Metro line expansions that will bring rail transit to the Planning Area. Although the Planning Area is served by multiple bus routes, it is not served by rail service and is impacted by traffic congestion. The Metro Expo Line serves the Planning Area, including stations at the University of Southern California, Exposition Park, Culver City, the Crenshaw District, and connection to Downtown Los Angeles. In addition, there are two airports in the Planning Area: LAX and the Santa Monica Municipal Airport. Marina Del Rey is a popular and highly active small boat harbor with 19 marinas with room for roughly 5,300 boats.

Planning Area Issues

Significant environmental resources exist in the Planning Area, most notably the Ballona Wetlands, which are threatened by potential sea level rise due to climate change. Marina Del Rey faces traffic congestion and housing affordability issues; however, protection of the coastline and fish and wildlife resources is unique to this coastal community. Large portions of the area, including Marina Del Rey, are located in a liquefaction zone. Marina Del Rey is also in a tsunami hazard zone and is particularly susceptible to the negative impacts of climate change. In addition, most of Ladera Heights / View Park–Windsor Hills is in a Very High Fire Hazard Severity Zone. There is also a fault trace running through this community. The Planning Area also includes a large urban oil field in Baldwin Hills.

Traffic congestion is one of the biggest issues facing the Planning Area. The Metro Expo Line runs through Culver City to the westside of the City of Los Angeles, but the popular and populous northern routes are not served by rail transit. Another issue is the relatively high cost of land and housing. The Planning Area is seen as a desirable place to live and do business, but there is little land for new development and costs are high.

Opportunity Areas

Figure 5.45: Opportunity Area Map—Ladera Heights/View Park—Windsor Hills

The Slauson Boulevard opportunity area in Ladera Heights/View Park–Windsor Hills, shown in Figure 5.45 is a commercial corridor with a major commercial center at the intersection of La Brea Avenue. The area is characterized by a mix of large parcels with regional commercial activities and local-serving retail services and offices. Significant pedestrian improvements are needed at the intersection of La Brea Avenue to create an attractive, walkable center with linkages to nearby residential neighborhoods.

Part III: General Plan Elements

Chapter 6: Land Use Element

I. Introduction

The Land Use Element provides strategies and planning tools to facilitate and guide future development and revitalization efforts. In accordance with the California Government Code, the Land Use Element designates the proposed general distribution and general location and extent of uses. The General Plan Land Use Policy Map and Land Use Legend serve as the "blueprint" for how land will be used to accommodate growth and change in the unincorporated areas.

II. Background

Land Uses

As shown in Table 6.1, over half of the unincorporated area is designated for natural resources. The next highest is rural, which accounts for 39 percent of the unincorporated areas, followed by residential, which accounts for three percent of the unincorporated areas.

Table 6.1: Total Land Use Policy

General Land Use Category	Acres*
Residential	54,741
Rural	651,272
Commercial	5,588
Industrial	9,162
Natural Resources	881,526
Public and Semi-Public	32,597
Mixed Use	758
Specific Plan	14,114
Other**	1,087
Total:	1,650,845

* Acreage includes all unincorporated territory in the County with the exception of rights-of-way. As a result of the update of Assessor Parcel data, new right-of-ways have been dedicated since August of 2011; so the total acreage between this table and Table C.3 differs by 67 acres.

** Some area and community plans have special categories that do not fit into the scheme of the proposed Land Use

Policy categories (such as "special use sites," parking areas, senior citizen density bonus areas, etc.)

General Plan Amendments and Implementation Tools

As the constitution for local development, the General Plan guides all activities that affect the physical environment.

General Plan Amendments

The General Plan should be amended periodically and through a comprehensive, community-based effort to address changes to community priorities, demographics or economic trends. Project-specific amendments must be consistent with the General Plan's overall intent, goals and policies.

Zoning

The General Plan Land Use Policy Map establishes the long-range vision, and general intended uses, densities and/or intensities of the land. The County's Zoning Code and Subdivision Code, and Zoning Map, are General Plan implementation tools that provide details on specific allowable uses, design and development standards, and procedures. Zoning and subdivision regulations set the standards that govern the division, design and use of individual parcels of land, including minimum lot size, lot configuration, access, height restrictions, and front and rear yard setback standards for structures. The Zoning Map is required to be consistent with the General Plan Land Use Policy Map.

For more information on the Los Angeles County Zoning and Subdivision Codes (Titles 21 and 22), please visit the Los Angeles County Department of Regional Planning's web site at http://planning.lacounty.gov.

Specific Plans

A specific plan is a tool to systematically implement the General Plan within an identified project area. Specific plans are used to ensure that multiple property owners and developers adhere to a common plan or coordinate multiple phases of a long-term development. Specific plans must further the goals and policies of the General Plan. No specific plan may be adopted or amended unless the proposed plan or amendment is consistent with the General Plan. No local public works project may be approved, no tentative map or parcel map for which a tentative map was not required may be approved, and no zoning ordinance may be adopted or amended within an area covered by a specific plan unless it is consistent with the adopted specific plan.

California Government Code Sections 65450 et seq. require specific plans to include text and a diagram(s) to detail the following:

- Distribution, location, extent of the uses of land, including open space, within the project area;
- Proposed distribution, location and extent and intensity of major components of public and private transportation, sewage, water, drainage, solid waste disposal, energy, and other essential facilities proposed to be located within the project area and needed to support the land uses described in the specific plan;
- Standards and criteria by which development will proceed and, where applicable, standards for conservation, development, and utilization of natural resources; and

- Implementation measures, including regulations, programs, public works projects, and financing measures necessary to carry out the above.

Specific plans must include a statement of the relationship of the specific plan to the General Plan, and may also include provisions regarding affordable housing, resource management, development requirements or any other matter relevant to the project area. In addition, a specific plan must be prepared, adopted, and amended in the same manner as a general plan, except that a specific plan may be adopted by resolution or by ordinance and may be amended as often as deemed necessary by the Board of Supervisors. A specific plan may be repealed in the same manner as it is required to be amended. Furthermore, a specific plan may be initiated by the public or private sector; however, the responsibility for the adoption, amendment, and repeal lies with the Board of Supervisors.

The Specific Plan Overlay in the General Plan Land Use Legend identifies the boundaries and shows the relationship of specific plans to the General Plan Land Use Policy Map.

The following is a list of specific plans in the unincorporated areas:

- Canyon Park Specific Plan (adopted 1986)
- La Viňa Specific Plan (adopted 1989)
- Santa Catalina Island Specific Plan (component of Local Coastal Program; adopted 1989)
- Marina Del Rey Specific Plan (component of Local Coastal Program; adopted 1996 and amended in 2012)
- Northlake Specific Plan (adopted 1993)
- Newhall Ranch Specific Plan (adopted 1999)
- Universal Studios Specific Plan (adopted 2013)

Development Agreements

A development agreement is a negotiated contract between the County and a private developer that, among other things, “locks in” land use and zoning regulations for the duration of the agreement. A development agreement provides assurance to an applicant that a development may proceed in accordance with existing policies, rules and regulations, and conditions of approval in effect at the time the agreement is adopted. The agreement in turn allows the County to negotiate a wider range of public benefits, including but not limited to, affordable housing, civic art, open space, or other amenities not authorized by current ordinances.

A development agreement must specify the duration of the agreement, the permitted uses of the property, the density or intensity of use, the maximum height and size of proposed buildings, and provisions for reservation or dedication or land for public purposes. It may include fees, conditions, terms, restrictions, and requirements for subsequent discretionary actions. However, any future actions must not prevent the development of the land for the uses and the density or intensity of development set forth in the agreement. Furthermore, the agreement may also include timeframes for commencing or completing construction, and terms and conditions of financing necessary public facilities and subsequent reimbursement.

Government Code Sections 65865 et seq. authorize the Board of Supervisors to adopt development agreements by ordinance. At the time of adoption, a development agreement must be consistent with the General Plan and any applicable specific plan. A development agreement is subject to referendum.

Special Management Areas

The County's Special Management Areas require additional development regulations that are necessary to prevent the loss of life and property, and to protect the natural environment and important resources. The extent of the County's Special Management Areas is shown in Figure 6.1.

The General Plan minimizes risks to hazards and discourages development in Special Management Areas through goals and policies. The Hazard, Environmental and Resource Constraints Model, which is a visual representation of some of the Special Management Areas, is intended to inform land use policies that are developed as part of future community-based planning efforts; inform applicants of potential site constraints and regulations; and to direct land use policies and the development of planning regulations and procedures to address hazards, environmental and resource constraints. For more information on the Hazard, Environmental and Resource Constraints Model, please refer to Appendix C.

Figure 6.1: Special Management Areas Policy Map

Special Management Areas are comprised of the following:

Agricultural Resource Areas

Agricultural Resource Areas (ARAs) consist of farmland identified by the California Department of Conservation and farms that have received permits from the Los Angeles County Agricultural Commissioner/Weights and Measures. The County encourages the preservation and sustainable utilization of agricultural land, agricultural activities and compatible uses within these areas. ARAs are described in greater detail in the Conservation and Natural Resources Element.

Airport Influence Areas

Airport Influence Areas are comprised of noise contours and runway protection zones, and airport property. With certain exceptions, all developments located in an Airport Influence Area are subject to review by the Airport Land Use Commission for compliance with noise and safety regulations.

Coastal Zone

There are five unincorporated areas in the state-designated coastal zone: Santa Catalina Island, Marina Del Rey, Santa Monica Mountains, Ballona Wetlands, and San Clemente Island. In accordance with the California Coastal Act, all development within the coastal zone must first obtain a Coastal Development Permit (CDP). Local Coastal Programs (LCPs) establish detailed land use policy and development standards within their respective coastal zone segments.

The County has certified LCPs for Santa Catalina Island and Marina Del Rey, which give the County authority over proposed developments. Prior to the certification of an LCP, specific development proposals are reviewed by the County for consistency with the General Plan, but the authority to issue CDPs lies with the California Coastal Commission.

The County has designated several types of coastal resources that are important to protect. These resources include: Environmentally Sensitive Habitat Areas; Significant Woodlands and Savannahs; Significant Watersheds; the Malibu Cold Creek Resource Management Area; and the Wildlife Migration Corridor. Coastal resources are described in greater detail in the Conservation and Natural Resources Element.

Historic, Cultural and Paleontological Resources

Historic, Cultural and Paleontological Resources include historic buildings, structures, Native American artifacts or sites, and districts of historical, architectural, archaeological, or paleontological significance, which are officially recognized by the California Office of Historic Preservation or identified in authoritative surveys of archaeological societies, historical societies, or academic studies. Historic, Cultural and Paleontological Resources are described in greater detail in the Conservation and Natural Resources Element.

Flood Hazard Zones

Flood Hazard Zones are areas subject to flooding. They are delineated as special hazard areas, or areas of moderate or minimal hazard on a Federal Emergency Management Agency (FEMA) issued flood insurance rate map. The identification of a Flood Hazard Zone does not imply that areas beyond, or the uses permitted within its boundaries will be free from flooding or flood damage. Flood Hazard Zones are described in greater detail in the Safety Element.

Mineral Resource Zones

Mineral Resource Zones are commercially viable mineral or aggregate deposits, such as sand, gravel, and other construction aggregate. The County's Mineral Resources consist of the California Geological Survey's identified deposits of regionally significant aggregate resources. Mineral Resource Zones are described in greater detail in the Conservation and Natural Resources Element.

Military Installations and Operation Areas

The U.S. Department of Defense is responsible for thousands of acres within Los Angeles County, including installations and facilities. Coordination between the County and U.S. Department of Defense is important to ensure compatibility between military installations and operation areas, and adjacent land uses (see Figure 6.2).The management of natural resources within the military installations and operation areas are described in greater detail in the Conservation and Natural Resources Element.

Figure 6.2 shows the boundaries and minimum altitudes for the Military Operation Areas (MOAs). An MOA is a three-dimensional airspace designated for military training and transport activities that have a defined floor (minimum altitude) and ceiling (maximum altitude). Within Los Angeles County, there are several MOAs used by military aircraft to practice high and low altitude training exercises and travel routes between military installations. Additionally, in and around MOAs, testing is conducted to maintain military readiness.

In guiding growth and development in the unincorporated areas, it is important to consider the critical role of MOAs in support of national defense. The General Plan considers all future land uses that seriously impact or hinder the military's training and testing capabilities to be incompatible land uses.

Figure 6.2: Military Installations and Operation Areas Map

National Forests

The Los Padres National Forest and Angeles National Forest encompass nearly 650,000 acres of land within Los Angeles County. Nearly 40,000 acres are privately-owned. For these parcels, commonly referred to as in-holdings, the County retains responsibility for land use regulation. Any privately-owned parcels in the national forests should be regulated in a manner that is consistent with the overall mission and management plans of the national forests, which the U.S. Forest Service prepares and periodically updates. The national forests are described in greater detail in the Conservation and Natural Resources Element.

Open Space Resource Areas

Open Space Resource Areas refer to public and private lands, and waters that are preserved in perpetuity or for long-term open space and recreational uses. Existing open spaces in the unincorporated areas include County parks and beaches, conservancy lands, state parklands, and federal lands. Open spaces can also include deed-restricted open space parcels and easements. Open Space Resource Areas are described in greater detail in the Conservation and Natural Resources Element.

Scenic Resources

The County recognizes that the coastline, mountain vistas, and other scenic features of the region are significant resources for the County. One type of scenic resource is the Hillside Management Areas (HMAs), which are mountainous or foothill terrain with a natural slope of 25 percent or greater. The purpose of the Hillside Management Ordinance in Title 22 of the County Code is to regulate development within Hillside Management Areas to 1) protect the public from natural hazards associated with steep hillsides, and 2) to mitigate the effects of development and grading on the scenic resources. In addition to HMAs, the General Plan protects ridgelines, scenic viewsheds, and areas along scenic highways. Scenic resources are described in greater detail in the Conservation and Natural Resources Element.

Seismic and Geotechnical Hazard Zones

Seismic and Geotechnical Hazard Zones include active and potentially active faults identified by the California State Division of Mines and Geology under the provisions of the Alquist-Priolo Earthquake Fault Zones Act (California Public Resources Code, Division 2, Chapter 7.5), as well as faults that are considered active based on published and unpublished information. The Seismic and Geotechnical Hazard Zones also include seismically-induced liquefaction and landslide areas. Seismic and Geotechnical Hazard Zones are described in greater detail in the Safety Element.

Significant Ecological Areas and Coastal Resource Areas

A Significant Ecological Area (SEA) designation is given to land in the County that contains irreplaceable biological resources. Cumulatively, the 21 SEAs and nine Coastal Resource Areas (CRAs) represent the wide-ranging biodiversity of Los Angeles County, and contain its most important biological resources. Individual SEAs include undisturbed or lightly disturbed habitat supporting valuable and threatened species, linkages and corridors to promote species movement, and are sized to support sustainable populations of its component species. SEAs and CRAs are described in greater detail in the Conservation and Natural Resources Element.

Very High Fire Hazard Severity Zones

In conjunction with the Forestry Division of the Los Angeles County Fire Department, woodland and brush areas with high fire potential have been identified as Very High Fire Hazard Severity Zones (VHFHSZ). VHFHSZs are discussed in greater detail in the Safety Element.

Disadvantaged Unincorporated Legacy Communities (SB 244)

SB 244, which became effective in 2011, requires cities and counties to identify and study the infrastructure needs of disadvantaged unincorporated communities. The County used the following criteria to identify "disadvantaged unincorporated legacy communities" as required by state law:

- Parcels are at least 50 years old.
- Parcels are outside of a city's sphere of influence.
- Parcels are clustered with 10 or more units in close proximity.
- Households earn less than 80% of the state median income.

As shown in Figure 6.3, the majority of parcels identified for SB 244 are concentrated in the eastern portion of the Antelope Valley. The remaining parcels are located in the western portion of the Antelope Valley, Lopez Canyon, Kagel Canyon, Altadena, Hacienda Heights, and Rowland Heights.

Figure 6.3: Disadvantaged Unincorporated Communities (SB 244)

For a general assessment of structural fire protection for the unincorporated areas, please refer to the Fire Hazards section of the Safety Element. For information on water service and sanitary sewers, please refer to the Drinking Water and Sanitary Sewer sections of the Public Services and Facilities Element. For information on stormwater management, please refer to the Local Water Resources section of the Conservation and Natural Resources Element. The intent of the General Plan is to address the specific needs of the disadvantaged legacy communities through area planning efforts. Please refer to Program PS/F-1: Planning Area Capital Improvement Plans in Chapter 16: General Plan Implementation Programs.

III. Issues

1. Creating Opportunities for Infill Development

Infill development contributes to compact development, which consumes less land and resources. It also reduces the costs of providing public infrastructure and services. It is important to recognize the opportunities as well as challenges of infill development in the unincorporated areas.

Transit Oriented Development

Areas with access to major transit and commercial corridors have the most potential for infill development. Transit-oriented development is well-suited for higher density housing and mixed uses, and commercial and civic activities. Transit-oriented development connects neighborhoods, and community and employment centers through a broad network of pedestrian, bicycle, transit, and roadway facilities.

Transit Oriented Districts (TODs)

TODs are areas within a 1/2 mile radius from a major transit stop, with development and design standards, and incentives to facilitate transit-oriented development. Figure 6.3 shows the location of the following 11 TODs:

- Aviation/LAX Station TOD (Metro Green Line)
- Hawthorne Station TOD (Metro Green Line)
- Vermont Station TOD (Metro Green Line)
- Rosa Parks Station TOD (Metro Green Line/Blue Line)
- Slauson Station TOD (Metro Blue Line)
- Florence Station TOD (Metro Blue Line)
- Firestone Station TOD (Metro Blue Line)
- Del Amo Station TOD (Metro Blue Line)
- Sierra Madre Villa Station TOD (Metro Gold Line)
- Third Street TOD Corridor (Metro Gold Line)
- 110 Freeway/Carson Station TOD (connection to Metro Silver Line)

As stated in Program LU-2 Transit Oriented District Program, all TODs will be implemented by a TOD specific plan, or a similar mechanism, with standards, regulations, and infrastructure plans that tailor to the unique characteristics and needs of each community, and address access and connectivity, pedestrian improvements, and safety.

The TOD plans will address existing challenges within many of the County's TODs. For example, many of the transit stations that serve the unincorporated areas are located in the middle of freeways, which limit access to the station, expose users to traffic and noise pollution, and create hostile environments for pedestrians. Another challenge to implementing TODs is the existing development patterns around the transit stations. As many of the lots are small, developments will require lot consolidation and incentives to utilize higher densities.

Figure 6.4: Transit Oriented Districts Policy Map

Vacant and Underutilized Parcels

Infill potential in urbanized areas is measured by the availability of vacant and underutilized parcels. Many vacant or underutilized parcels in infill areas have site constraints and in some cases, do not meet current zoning regulations and development standards. For example, many infill parcels along major commercial corridors are shallow or narrow, and new parking, landscaping or drainage requirements may require more land area than physically or financially feasible. Regulatory incentives are needed to encourage development on these sites.

Brownfields

Brownfield sites are former industrial or commercial sites that are abandoned or underutilized due to real or perceived environmental contamination from previous or current uses. Brownfield sites present infill development opportunities, as well as opportunities to clean up environmentally damaged sites in the unincorporated areas.

The costs and liability associated with remediating brownfield sites, however, is a deterrent to redevelopment. Technical assistance, financing and other programs are necessary to promote brownfields redevelopment.

Adaptive Reuse

Older and often historically significant buildings can be recycled and converted into other uses, such as multifamily residential developments, live and work units, mixed use developments, or commercial uses. Adaptive reuse can play a key role in revitalizing older, economically-distressed neighborhoods. However, preexisting conditions, such as building location, lack of onsite parking, footprint and size, may not meet current zoning regulations and development standards. Regulatory incentives are needed to encourage the adaptive reuse of older buildings.

2. The Impacts of Sprawl

Sprawl is a low-density land use pattern that extends development into greenfields and other undeveloped lands with limited or no infrastructure and transit options. A sprawling land use pattern puts the unincorporated areas at risk of losing resources, such as agricultural lands, and will contribute to the fragmentation and isolation of open space areas. In addition, as sprawl is commonly located in areas with limited or no transit options, continuing this land use pattern contributes to traffic congestion, air pollution, and greenhouse gas emissions.

3. Land Use Compatibility and Distribution

Land Use Compatibility

Land use conflicts over noise, odor, exposure to hazards, and community character are important considerations in land use planning. The placement and distribution of land uses has a significant impact on the quality of life. Residential uses, for example, should be buffered from intensive land uses, such as heavy industrial or heavy agricultural uses, for health and safety reasons. The General Plan addresses land use compatibility by mapping and regulating uses and intensities, and including policies and programs that mitigate land use conflicts through design, such as the use of landscaping, walls, building orientation, and performance standards. The General Plan also encourages developments that are compatible with community identity and character and existing conditions, such as rural and natural environmental settings.

Major facilities, such as landfills, solid waste disposal sites, energy facilities, natural gas storage facilities, military installations, and airports should be protected from the encroachment of incompatible uses. For example, the County's Airport Land Use Plan, which was adopted by the Airport Land Use Commission (ALUC) in 1991, addresses compatibility between airports and surrounding land uses by addressing noise, overflight, safety, and airspace protection concerns to minimize the public's exposure to excessive noise and safety hazards within Airport Influence Areas. The Airport Influence Areas are shown in Figure 6.4.

Figure 6.5: Airport Influence Areas Policy Map

Planning for Various Needs through Land Use Planning

As discussed in the Housing Element, denser and more compact housing types are necessary in the unincorporated areas to accommodate the housing needs of the growing senior citizen population, younger individuals living alone, low-income households, and others who need and/or desire apartments, condominiums, and smaller, more affordable housing units.

As discussed in the Economic Development Element, land suitable for employment-rich businesses and industrial uses is an invaluable economic resource. The County must identify areas that are appropriate to accommodate job growth and support increased demand for goods and services. While land intensive commercial activities generally serve regional and local needs, and are best located within major transportation corridors, there is also a need for community-serving commercial uses in proximity to residential neighborhoods. The inclusion of complementary land uses within local communities, such as local-serving grocery stores, parks and schools in residential neighborhoods, or community-serving uses near employment centers, can promote a balanced distribution of jobs, housing and services. Furthermore, access to amenities that promote health, such as healthy food, is a strategy to address the obesity epidemic and corresponding high rates of chronic diseases.

In particular, food systems are a critical component of planning for healthy, livable, and equitable communities. Ensuring that opportunities exist to grow, sell, and consume healthy foods promotes public health and supports efforts to reduce obesity rates. Land use patterns that encourage access to healthy food provide the foundation necessary to build healthier communities and address equitable access to healthy food.

Among community-serving uses, early care and education falls short of meeting demand. There is a need to ensure that all households have access to a sufficient supply of quality early care and education and supervised school-age enrichment options for children from birth to age 13. In conjunction with the goals, strategies and objectives of the County's Child Care Policy Framework and Child Care Planning Committee, the General Plan encourages and facilitates the development of early care and education in the unincorporated areas. For more information, please visit the CEO Office of Child Care web site at http://childcare.lacounty.gov.

4. Community Wellness

Community design and sustainable developments contribute to land use patterns and community infrastructure that promote health and wellness in communities.

Community Design

Community design relates to the physical character and order of a community, and the relationship between people and their environment, and with each other. Community design is the understanding that what constitutes "good" design is entirely dependent on the context and perspective of each individual community. Community design in rural areas in the Antelope Valley could be different from community design in urbanized communities, such as East Los Angeles and Florence-Firestone.

Community design does not focus on the architectural style of a specific building or site, but rather groups of related elements and uses that when taken together, define a community. Community design considers the adjacency of building entry and sidewalk, the scale of new buildings relative to neighboring structures, and the relationship of the street to the sidewalk. Other examples include

designing neighborhood gateways, streetscape improvements on a commercial corridor, consistent landscaping for streets, and uniform signage that can designate a special district within a community. Successful community design standards build upon the characteristics of both the natural and man-made environments that are unique to each community.

The General Plan establishes the foundation for general community design policies that help create a "sense of place" and uniqueness within the diverse communities of the unincorporated areas.

The Role of the Arts

Artistic and cultural resources are important components of livable communities. Civic art, which contributes significantly to the vitality of a region by improving the quality of the environment and fostering a positive community identity, can be used in conjunction with community design efforts to sustain and enhance policy direction, community character, and a sense of place in planning initiatives and policies. The arts play a central role in comprehensive community revitalization efforts that include public safety, health, education, affordable housing, transportation, planning, and design.

The General Plan protects existing art and cultural assets, and promotes the creation of new art to enhance communities. The General Plan also includes implementation programs that promote creative place-making to enhance the physical and social character of healthy, livable communities.

Sustainable Developments

Below are techniques that could help achieve a range of sustainable development.

Energy Efficient Developments

Sustainable practices, such optimizing the solar orientation of buildings to maximize passive and active solar design techniques, results in healthier and energy efficient environments. In addition, providing substantial tree canopy cover, and utilizing light colored paving materials and reflective roofing materials, can reduce the urban heat island effect.

Sustainable Subdivision Design

<u>Energy Efficient Lot Design</u>

The size, shape and orientation of a lot are important considerations in achieving energy-efficient building designs. Energy-efficient lot design maximizes solar access during the cooler months, while minimizing solar access during the warmer months. The slope of the land also has implications for lot design and energy-efficiency. Constructing roads to follow slope contours can reduce construction costs and minimize energy inputs to the development of the site.

<u>Density Controlled Design, Natural Resource Conservation, and Hazard Mitigation</u>

Density controlled subdivision design allows buildings to locate closer together on a smaller portion of land so that larger, contiguous natural resource areas may be conserved in a cohesive manner. Density controlled design can also mitigate the exposure of residential uses to hazards, such as wildfires, through the siting and design of open space.

<u>Street Patterns, Public Transportation and Implications for Accessibility</u>

An interconnected street pattern that minimizes cul-de-sacs and dead ends provides increased safety and a greater number of route options for pedestrians, bicyclists and motorists.

Interconnected streets also provide direct access to schools and neighborhood shopping without cars. Interconnected streets disperse rather than concentrate vehicular traffic, decrease trip lengths for all road users, and improve local and regional accessibility.

IV. Land Use Legend

The General Plan Land Use Legend, Table 6.2, describes the designations that guide land use and development activities in the unincorporated areas. Currently, each existing community-based plan has a different land use legend. Nonetheless, the land use legends in all existing community-based plans are within the range of the General Plan Land Use Legend, and are considered consistent with the General Plan Land Use Legend. As described in LU Policy 2.12, as part of a comprehensive area planning effort, the land use legends for existing community-based plans and existing specific plans shall be updated, as needed, to reflect the General Plan Land Use Legend. An exception to this is for coastal land use plans, which are subject to the California Coastal Act and to review by the California Coastal Commission.

The General Plan Land Use Legend provides general intended uses and intensities. Each land use designation is primarily designed to encourage the general intended uses listed in Table 6.2. However, uses are not limited to the general intended uses listed under each designation; other uses that are allowed through zoning may be deemed compatible with the general intended uses. For specific use types, development and design standards and procedures, please refer to the Zoning Code or any applicable specific plan. For an estimate of population and employment density for each land use designation, please refer to Appendix C.

Intensity Calculations

Allowable Residential Units Calculation

Residential density shall be calculated using the net area of the project site, unless the property is on land that is designated Rural Land. The net area excludes dedicated streets and private easements (e.g., access) where the owner of the underlying parcel does not have the right to use the entire surface. All proposed residential densities must fit within the range specified by the land use designation in the General Plan Land Use Legend.

For any Rural Land designation, the residential density shall be calculated using the gross area of the parcel(s). The gross area of a parcel includes dedicated streets and private easements.

Floor Area Ratio (FAR) Calculation

Floor Area Ratio (FAR) is the ratio of the total above-ground gross floor area of all buildings to the area of the project site. As a formula, FAR = (total above-ground gross floor area of all buildings)/ (area of the project site).

When specified, and under limited circumstances, the General Plan permits deviations to the Land Use Legend and Land Use Policy Map, such as an increase in density above the maximum allowable density. These include the allowance of density bonuses for affordable and senior citizen housing, as well as other incentive-based local ordinances that implement the goals of the General Plan.

Table 6.2: Land Use Designations

Land Use	Code	Permitted Density or FAR	Purpose
RURAL			
Rural Land	RL1	Residential: Maximum 1 du/1 gross ac Non-Residential: Maximum FAR 0.5	Purpose: Single family residences; equestrian and limited animal uses; and limited agricultural and related activities.
	RL2	Residential: Maximum 1 du/2 gross ac Non-Residential: Maximum FAR 0.5	
	RL5	Residential: Maximum 1 du/5 gross ac Non-Residential: Maximum FAR 0.5	
	RL10	Residential: Maximum 1 du/10 gross ac Non-Residential: Maximum FAR 0.5	Purpose: Single family residences; equestrian and animal uses; and agricultural and related activities.
	RL20	Residential: Maximum 1 du/20 gross ac Non-Residential: Maximum FAR 0.5	
	RL40	Residential: Maximum 1 du/40 gross ac Non-Residential: Maximum FAR 0.5	

Land Use	Code	Permitted Density or FAR	Purpose
RESIDENTIAL			

Residential 2	H2	Residential: 0–2 du/net ac	Purpose: Single family residences.
Residential 5	H5	Residential: 0–5 du/net ac	
Residential 9	H9	Residential: 0–9 du/net ac	
Residential 18	H18	Residential: 0–18 du/net ac	Purpose: Single family residences, two family residences.
Residential 30	H30	Residential: 0–30 du/net ac	Purpose: Single family residences, two family residences, multifamily residences.
Residential 50	H50	Residential: 0–50 du/net ac	
Residential 100	H100	Residential: 50-100 du/net ac	Purpose: Multifamily residences.
Residential 150	H150	Residential: 100-150 du/net ac	

Land Use	Code	Permitted Density or FAR	Purpose
COMMERCIAL			
Rural Commercial	CR	Non-Residential: Maximum FAR 0.5	Purpose: Limited commercial uses that are compatible with rural, agricultural, and low-intensity visitor-serving recreational activities, including retail, restaurants, and personal and professional services.
General Commercial	CG	Residential: 0-50 du/net ac Non-Residential: Maximum FAR 1.0 Mixed Use: 0-50 du/net ac and FAR 1.0	Purpose: Local-serving commercial uses, including retail, restaurants, and personal and professional services; single family and multifamily residences; and residential and commercial mixed uses.
Major Commercial	CM	Residential: 30-150 du/net ac Non-Residential: Maximum FAR 3.0 Mixed Use: 30-150 du/net ac and FAR 3.0	Purpose: Large and intense commercial uses, such as regional and destination shopping centers, tourist and recreation related commercial services; multifamily residences; and residential and commercial mixed uses.

Land Use	Code	Permitted Density or FAR	Purpose
MIXED USE			
Mixed Use	MU	Residential: 0-150 du/net ac Non-Residential: Maximum FAR 3.0 Mixed Use: 0-150 du/net ac and FAR 3.0	Purpose: Pedestrian-friendly and community-serving commercial uses that encourage walking, bicycling, and transit use; residential and commercial mixed uses; and multifamily residences.
Mixed Use – Rural	MU-R	Residential: 0-5 du/net ac Non-Residential: Maximum FAR 0.5 Mixed Use: 0-5 du/net ac and FAR 0.5	Purpose: Limited commercial uses that are compatible with rural, agricultural, and low-intensity visitor-serving recreational activities, including retail, restaurants, and personal and professional services; residential and commercial mixed uses.

Land Use	Code	Permitted Density or FAR	Purpose
INDUSTRIAL			
Light Industrial	IL	Non-Residential: Maximum FAR 1.0	Purpose: Light industrial uses, including light manufacturing, assembly, warehousing and distribution.
Heavy Industrial	IH	Non-Residential: Maximum FAR 1.0	Purpose: Heavy industrial uses, including heavy manufacturing, refineries, and other labor and capital intensive industrial activities.
Industrial Office	IO	Non-Residential: Maximum FAR 2.0	Purpose: Employment centers with major office and business uses, such as technology and research centers, corporate headquarters, clean tech, and clean industry hubs.

Land Use	Code	Permitted Density or FAR	Purpose
PUBLIC AND SEMI-PUBLIC			
Public and Semi-Public	P	Non-Residential: Maximum FAR 3.0	Purpose: Public and semi-public facilities and community-serving uses, including public buildings and campuses, schools, hospitals, cemeteries, and fairgrounds; airports and other major transportation facilities. Other major public facilities, including planned facilities that may be public-serving but generally not publicly accessible, such as landfills, solid and liquid waste disposal sites, multiple use stormwater treatment facilities, and major utilities. In the event that the public or semi-public use of mapped facilities is terminated, alternative uses that are compatible with the surrounding development, in keeping with community character, are permitted.
NATURAL RESOURCES			
Conservation	OS-C	N/A	Purpose: The preservation of open space areas and scenic resource preservation in perpetuity. Applies to land that is legally dedicated for open space and conservation efforts.
Parks and Recreation	OS-PR	N/A	Purpose: Open space recreational uses, such as regional and local parks, trails, athletic fields, community gardens, and golf courses.
National Forest	OS-NF	N/A	Purpose: Areas within the national forest and managed by the National Forest Service.
Bureau of Land Management	OS-BLM	N/A	Purpose: Areas that are managed by the Federal Bureau of Land Management.
Water	OS-W	N/A	Purpose: Bodies of water, such as lakes, reservoirs, natural waterways, and man-made infrastructure, such as drainage channels, floodways, and spillways. Includes active trail networks within or along drainage channels.
Mineral Resources	MR	N/A	Purpose: Areas appropriate for mineral extraction and processing as well as activities related to the drilling for and production of oil and gas.
Military Land	ML	N/A	Purpose: Military installations and land controlled by U.S. Department of Defense.

Land Use	Code	Permitted Density or FAR	Purpose
OVERLAYS			
Transit Oriented District	TOD	Determined by the station area plan for each TOD	Purpose: Pedestrian-friendly and community-serving uses near transit stops that encourage walking, bicycling, and transit use.
Special Management Areas	SMA	N/A	Purpose: Special Management Areas require additional development regulations due to the presence of natural resources, scenic resources, or identified hazards. Development regulations are necessary to prevent loss of life and property, and to protect the natural environment. Special Management Areas include: Significant Ecological Areas; National Forests; Coastal Zone; Agricultural Resource Areas; Mineral Resource Zones; Scenic Resources; Historic, Cultural and Paleontological Resources; Seismic Hazard Zones; Flood Hazard Zones; Very High Fire Hazard Severity Zones; and Airport Influence Areas.
Specific Plan	SP	N/A	Purpose: Specific plans contain precise guidance for land development, infrastructure, amenities and resource conservation. Specific plans must be consistent with the General Plan. Detailed policy and/or regulatory requirements are contained within each specific plan document.
Employment Protection District	EPD	N/A	Purpose: Economically viable industrial and employment-rich lands with policies to protect these areas from conversion to non-industrial uses.

V. Goals and Policies

Goal LU 1: A General Plan that serves as the constitution for development, and a Land Use Policy Map that implements the General Plan's Goals, Policies and Guiding Principles.	
Topic	**Policy**
General Plan Amendments	Policy LU 1.1: Support comprehensive updates to the General Plan, area plans, community plans, coastal land use plans and specific plans.
	Policy LU 1.2: Discourage project-specific amendments to the text of the General Plan, including but not limited to the Guiding Principles, Goals, and Policies.
	Policy LU 1.3: In the review of project-specific amendments to the General Plan, ensure that they support the Guiding Principles.
	Policy LU 1.4: In the review of a project-specific amendment(s) to the General Plan, ensure that the project-specific amendment(s): • Is consistent with the goals and policies of the General Plan; • Shall benefit the public interest and is necessary to realize an unmet local or regional need.
	Policy LU 1.5: In the review of a project-specific amendment(s) to convert OS-C designated lands to other land use designations, ensure that the project-specific amendment(s) does not contribute to the overall loss of open space that protects water quality, provides natural habitats, and contributes to improved air quality.
	Policy LU 1.6: In the review of a project-specific amendment(s) to convert lands within the EPD Overlay to non-industrial land use designations, ensure that the project-specific amendment(s): • Is located on a parcel that adjoins a parcel with a comparable use, at a comparable scale and intensity; • Will not negatively impact the productivity of neighboring industrial activities; • Is necessary to promote the economic value and the long-term viability of the site; and • Will not subject future residents to potential noxious impacts, such as noise, odors or dust or pose significant health and safety risks.
	Policy LU 1.7: In the review of a project-specific amendment(s) to convert lands within the ARAs, ensure that the project-specific amendment(s): • Is located on a parcel that adjoins another parcel with a comparable use, at a comparable scale and intensity; and • Will not negatively impact the productivity of neighboring agricultural activities.
	Policy LU 1.8: Limit the amendment of each mandatory element of the General Plan to four times per calendar year, unless otherwise specified in Section 65358 of the California Government Code.

	Policy LU 1.9: Allow adjustments to the General Plan Land Use Policy Map to follow an adjusted Highway Plan alignment without a General Plan amendment, when the following findings can be met: • The adjustment is necessitated by an adjusted Highway Plan alignment that was approved by the Los Angeles County Interdepartmental Engineering Committee (IEC) in a duly noticed public meeting; • The adjustment maintains the basic relationship between land use types; and • The adjustment is consistent with the General Plan.
Specific Plans	Policy LU 1.10: Require the intensity, density, and uses allowed in a new specific plan to be determined using the General Plan, including the Land Use Policy Map and Land Use Legend.
	Policy LU 1.11: Require a General Plan amendment for any deviation from the intensities, densities, and uses allowed by the General Plan (to apply the appropriate designation from the General Plan Land Use Legend), unless allowances for flexibility are specified in the specific plan.
	Policy LU 1.12: Require development regulations and zoning for new specific plans to be consistent with their corresponding General Plan land use designation.
	Policy LU 1.13: Allow specific plans to include implementation procedures for flexibility, such as development phasing, and redistribution of intensities and uses, as appropriate.
	Policy LU 1.14: Require a specific plan amendment for any deviation from the procedures and policies established by a specific plan.
	Policy LU 1.15: For existing specific plans, which are depicted with an “SP” land use designation, the General Plan Land Use Policy Map shall be amended as part of a comprehensive area planning effort, to identify existing specific plans using the Specific Plan Overlay.
Goal LU 2: Community-based planning efforts that implement the General Plan and incorporate public input, and regional and community level collaboration.	
Topic	**Policy**
Regional and Community-Based Planning Initiatives	Policy LU 2.1: Ensure that all community-based plans are consistent with the General Plan.
	Policy LU 2.2: Ensure broad outreach, public participation, and opportunities for community input in community-based planning efforts.
	Policy LU 2.3: Consult with and ensure that applicable County departments, adjacent cities and other stakeholders are involved in community-based planning efforts.
	Policy LU 2.4: Coordinate with other local jurisdictions to develop compatible land uses.
	Policy LU 2.5: Support and actively participate in inter-jurisdictional and regional planning efforts to help inform community-based planning efforts.
	Policy LU 2.6: Consider the role of arts and culture in community-based planning efforts to celebrate and enhance community character.

	Policy LU 2.7: Set priorities for Planning Area-specific issues, including transportation, housing, open space, and public safety as part of community-based planning efforts.
	Policy LU 2.8: Coordinate with the Los Angeles County Department of Public Works and other infrastructure providers to analyze and assess infrastructure improvements that are necessary for plan implementation.
	Policy LU 2.9: Utilize the General Plan Land Use Legend and the Hazard, Environmental and Resource Constraints Model to inform the development of land use policy maps.
	Policy LU 2.10: Ensure consistency between land use policy and zoning by undergoing a comprehensive zoning consistency analysis that includes zoning map changes and Zoning Code amendments, as needed.
	Policy LU 2.11: Update community-based plans on a regular basis.
	Policy LU 2.12: Community-based plans and existing specific plans shall be updated, as needed, to reflect the General Plan Land Use Legend as part of a comprehensive area planning effort. An exception to this is for coastal land use plans, which are subject to the California Coastal Act and to review by the California Coastal Commission.
Goal LU 3: A development pattern that discourages sprawl and protects and conserves greenfield areas, natural resources, and SEAs.	
Topic	**Policy**
Growth Management	Policy LU 3.1: Protect and conserve greenfield areas, natural resources, and SEAs.
	Policy LU 3.2: Discourage development in areas with environmental resources and/or safety hazards.
	Policy LU 3.3: Discourage development in greenfield areas where infrastructure and public services do not exist.
Goal LU 4: Infill development and redevelopment that strengthens and enhances communities.	
Topic	**Policy**
Infill Development	Policy LU 4.1: Encourage infill development on vacant, underutilized, and/or brownfield sites.
	Policy LU 4.2: Encourage the adaptive reuse of underutilized structures and the revitalization of older, economically distressed neighborhoods.
	Policy LU 4.3: Encourage transit-oriented development with the appropriate residential density along transit corridors and within station areas.
	Policy LU 4.4: Encourage mixed use development along major commercial corridors.
Goal LU 5: Vibrant, livable and healthy communities with a mix of land uses, services and amenities.	

Topic	Policy
Community-Serving Uses	Policy LU 5.1: Encourage a mix of residential land use designations and development regulations that accommodate various densities, building types and styles.
	Policy LU 5.2: Encourage a diversity of commercial and retail services, and public facilities at various scales to meet regional and local needs.
	Policy LU 5.3: Support a mix of land uses that promote bicycling and walking, and reduce VMTs.
	Policy LU 5.4: Encourage community-serving uses, such as early care and education facilities, grocery stores, farmers markets, restaurants, and banks to locate near employment centers.
	Policy LU 5.5: Ensure that all households have access to a sufficient supply of quality early care and education and supervised school-age enrichment options for children from birth to age 13.
	Policy LU 5.6: Reduce regulatory and other barriers to early care and education facilities.
	Policy LU 5.7: Direct resources to areas that lack amenities, such as transit, clean air, grocery stores, bikeways, parks, and other components of a healthy community.
	Policy LU 5.8: Encourage farmers markets, community gardens, and proximity to other local food sources that provide access to healthful and nutritious foods.
Employment Generating Uses	Policy LU 5.9: Preserve key industrially designated land for intensive, employment-based uses.
	Policy LU 5.10: Encourage employment opportunities and housing to be developed in proximity to one another.
Goal LU 6: Compatible land uses that complement neighborhood character and the natural environment.	
Topic	**Policy**
Land Use Compatibility	Policy LU 6.1: Reduce and mitigate the impacts of incompatible land uses, where feasible, using buffers and other design techniques.
	Policy LU 6.2: Protect industrial parks and districts from incompatible uses.
	Policy LU 6.3: Protect public and semi-public facilities, including but not limited to major landfills, natural gas storage facilities, and solid waste disposal sites from incompatible uses.
	Policy LU 6.4: Ensure land use compatibility in areas adjacent to military installations and where military operations, testing, and training activities occur.
	Policy LU 6.5: Ensure land use compatibility in areas adjacent to mineral resources where mineral extraction and production, as well as activities related to the drilling for and production of oil and gas, may occur.
	Policy LU 6.6: Ensure airport operation compatibility with adjacent land uses through airport land use plans.

Rural Character	Policy LU 6.7: Protect rural communities from the encroachment of incompatible development.
	Policy LU 6.8: Encourage land uses and developments that are compatible with the natural environment and landscape.
	Policy LU 6.9: Encourage development in rural areas that is compatible with rural community character, preserves open space, conserves agricultural land, and promotes efficiencies in services and infrastructure.
Goal LU 7: Land uses that are compatible with military operations and military readiness, and enhance safety for military personnel and persons on the ground.	
Topic	**Policy**
Military Compatible Uses	Policy LU 7.1: Facilitate the early exchange of project-related information that is pertinent to military operations with the military for proposed actions within MOAs and within 1,000 ft. of a military installation.
	Policy LU 7.2: Evaluate the potential impact of new structures within MOAs to ensure the safety of the residents on the ground and continued viability of military operations within the MOAs. In the review of development within MOAs, consider the following: • Uses that produce electromagnetic and frequency spectrum interference, which could impact military operations; • Uses that release into the air any substance such as steam, dust and smoke, which impair pilot visibility; • Uses that produce light emissions, glare or distracting lights, which could interfere with pilot vision or be mistaken for airfield lighting; and • Uses that physically obstruct any portion of the MOA due to relative height above ground level.
Goal LU 8: Land use patterns and community infrastructure that promote health and wellness.	
Topic	**Policy**
Community Wellness	Policy LU 8.1: Promote community health for all neighborhoods.
	Policy LU 8.2: Encourage patterns of development, such as sidewalks and bikeways that promote physical activity.
	Policy LU 8.3: Encourage patterns of development that increase convenient, safe access to healthy foods, especially fresh produce, in all neighborhoods.
Goal LU 9: Well-designed and healthy places that support a diversity of built environments.	
Topic	**Policy**

Community Design	Policy LU 9.1: Encourage community outreach and stakeholder agency input early and often in the design of projects.
	Policy LU 9.2: Design development adjacent to natural features in a sensitive manner to complement the natural environment.
	Policy LU 9.3: Consider the built environment of the surrounding area in the design and scale of new or remodeled buildings, architectural styles, and reflect appropriate features such as massing, materials, color, detailing or ornament.
	Policy LU 9.4: Promote environmentally-sensitive and sustainable design.
	Policy LU 9.5: Encourage the use of distinctive landscaping, signage and other features to define the unique character of districts, neighborhoods or communities, and engender community identity, pride and community interaction.
	Policy LU 9.6: Encourage pedestrian activity through the following: • Designing the main entrance of buildings to front the street; • Incorporating landscaping features; • Limiting masonry walls and parking lots along commercial corridors and other public spaces; • Incorporating street furniture, signage, and public events and activities; and • Using wayfinding strategies to highlight community points of interest.
	Policy LU 9.7: Promote public spaces, such as plazas that enhance the pedestrian environment, and continuity along commercial corridors with transit or active pedestrian activities.
	Policy LU 9.8: Promote public art and cultural amenities that support community values and enhance community context.
	Policy LU 9.9: Encourage land uses and design that stimulate positive and productive human relations and foster the achievement of community goals.
	Policy LU 9.10: Promote architecturally distinctive buildings and focal points at prominent locations, such as major commercial intersections and near transit stations or open spaces.
	Policy LU 9.11: Facilitate the use of streets as public space for activities that promote civic engagement, such as farmers markets, parades, etc.
	Policy LU 9.12: Discourage gated entry subdivisions (“gated communities”) to improve neighborhood access and circulation, improve emergency access, and encourage social cohesion.
	Policy LU 9.13: Discourage flag lot subdivisions unless designed to be compatible with the existing neighborhood character.
Goal LU 10: Development that utilize sustainable design techniques.	

Topic	Policy
Energy Efficient Development	Policy LU 10.1: Encourage new development to employ sustainable energy practices, such as utilizing passive solar techniques and/or active solar technologies.
	Policy LU 10.2: Support the design of developments that provide substantial tree canopy cover, and utilize light colored paving materials and reflective roofing materials to reduce the urban heat island effect.
	Policy LU 10.3: Encourage development to optimize the solar orientation of buildings to maximize passive and active solar design techniques.
Sustainable Subdivisions	Policy LU 10.4: Encourage subdivisions to utilize sustainable design practices, such as maximizing energy efficiency through lot configuration, maximizing interconnectivity, and utilizing public transit.
	Policy LU 10.5: Prohibit the use of private yards as required open space within subdivisions, unless such area includes active recreation or outdoor activity areas dedicated for common and/or public use.
	Policy LU 10.6: Ensure that subdivisions in VHFHSZs site open space to minimize fire risks from flammable vegetation.
	Policy LU 10.7: Encourage the use of density controlled design techniques to conserve natural resource areas.
	Policy LU 10.8: Encourage sustainable subdivisions that meet green neighborhood standards, such as Leadership in Energy and Environmental Design–Neighborhood Development (LEED-ND).

VI. Land Use Element Implementation Programs

- Planning Areas Framework Program
- TOD Program
- Airport Land Use Compatibility Plans
- Growth Management Program
- Civic Art Program
- Transfer of Development Rights Program
- Adaptive Reuse Ordinance
- Art and Cultural Resources Program
- Community Design Guidelines
- Early Care and Education Program

- Military Operation Areas Overlay Ordinance

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Boxes]

Jobs-Housing Balance

Jobs-housing balance is reached by working toward increasing opportunities for people to work and live in close proximity, and reduce long commutes that are costly both economically and environmentally. This can be quantified by taking the number of jobs divided by the number of housing units. A community with fewer jobs than residences would have a low jobs-housing ratio. Communities with a high jobs-housing ratio are usually considered major employment centers for a region. If the ratio is high or low, there is a jobs-housing imbalance.

Brownfields

Data on the number of brownfield sites in unincorporated areas of the County is provided by the California Department of Toxic Substances Control (DTSC) EnviroStor public web site, which provides access to detailed information on hazardous waste permitted and corrective action facilities, as well as existing site cleanup information. For further information on particular brownfield sites, please visit the DTSC web site at http://www.dtsc.ca.gov/.

Soul of the Community 2010

What makes a community a desirable place to live? What makes people stay and build a future in a community?

In 2008, Gallup and the John S. and James L. Knight Foundation set out to answer these questions through the Soul of the Community project. After interviewing around 43,000 people in 26 communities, the study concluded that the main factors that attached people to place include: an area's physical beauty, opportunities for socializing, and a community's openness to all people.

Source: Knight Soul of the Community 2010, Why People Love Where They Live and Why It Matters: A National Perspective. http://www.soulofthecommunity.org/

Airport Land Use Commission (ALUC)

The State law requires each county with public use airports to establish an Airport Land Use Commission (ALUC). The ALUC is mandated to fulfill two specific duties:

- To prepare airport land use plans for promoting and ensuring compatibility between each airport in a county and its surrounding and adjacent land uses; and
- To review local agency land use actions and airport plans for consistency with the airport land use plan and policies.

SCAG's Compass Blueprint Growth Vision

The Land Use Element goals and policies are consistent with the SCAG's Compass Blueprint Growth Vision, which contains a set of land use strategies that SCAG encourages local governments to implement:

- Focusing growth in existing and emerging centers and along major transportation corridors.

- Creating significant areas of mixed-use development and walkable, “people scaled” communities.
- Providing new housing opportunities that respond to the region’s changing demographics.
- Targeting growth in housing, employment, and commercial development within walking distance of existing and planned transit stations.
- Injecting new life into under-used areas by creating vibrant new business districts, redeveloping old buildings, and building new businesses and housing on vacant lots.
- Preserving existing, stable, single family neighborhoods.
- Protecting important open space, environmentally sensitive areas and agricultural lands from development.

Chapter 7: Mobility Element

I. Introduction

The California Complete Streets Act of 2007 requires the General Plan to demonstrate how the County will provide for the routine accommodation of all users of a road or street, including pedestrians, bicyclists, users of public transit, motorists, children, seniors, and the disabled. The Mobility Element addresses this requirement with policies and programs that consider all modes of travel, with the goal of making streets safer, accessible and more convenient to walk, ride a bicycle, or take transit.

The Mobility Element provides an overview of the transportation infrastructure and strategies for developing an efficient and multimodal transportation network. The Element assesses the challenges and constraints of the Los Angeles County transportation system, and offers policy guidance to reach the County's long-term mobility goals. Two sub-elements—the Highway Plan and Bicycle Master Plan—supplement the Mobility Element. These plans establish policies for the roadway and bikeway systems in the unincorporated areas, which are coordinated with the networks in the 88 cities in Los Angeles County. The General Plan also establishes a program to prepare community pedestrian plans, with guidelines and standards to promote walkability and connectivity throughout the unincorporated areas.

II. Background

Los Angeles County has one of the largest transportation systems in the world. Despite continuing efforts to increase transportation services and build transportation infrastructure, transportation systems are heavily burdened by the demands of a growing population and a diversity of activities. Transportation is also one of the biggest contributors of noise, and greenhouse gases and other air pollutants.

Regulatory Framework

Local agencies responsible for transportation services in Los Angeles County coordinate their activities to comply with the goals and policies of Southern California Association of Governments (SCAG) and Los Angeles County Metropolitan Transportation Authority (Metro). SCAG is the federally designated regional transportation planning agency responsible for preparing the Regional Transportation Plan (RTP) and the Sustainable Communities Strategy (SCS). Metro is the county-level transportation planning agency responsible for the preparation of the Long Range Transportation Plan (LRTP). The County, the 88 cities in Los Angeles County, and other transportation agencies engage in transportation planning activities by participating in the development and implementation of the RTP and LRTP.

The County participates in establishing policies, promoting specific projects, and funding the strategies in the RTP and the LRTP. Each Los Angeles County Supervisor is a member of the Metro Board of Directors, and two members of the Board of Supervisors serve on SCAG's Regional Council, and on the Southern California Regional Rail Authority (Metrolink) Board of Directors.

Metro is also the Congestion Management Agency for Los Angeles County and is responsible for implementing the Congestion Management Program (CMP). Metro is currently exploring the development of a countywide congestion mitigation fee program. This program, adopted locally by

individual jurisdictions, would impose a fee on new development that would be collected and spent locally on transportation projects that would help to ease regional congestion. For more information, please visit Metro's web site at http://www.metro.net/projects/congestion_mgmt_pgm/.

Transportation Systems in Los Angeles County

Public Transit

Los Angeles County is served by a large public transit system that includes rail systems and various bus service options, such as transitways and bus rapid transit systems. Figure 7.1 depicts the major public transit systems in Los Angeles County.

Figure 7.1: Major Public Transit Systems Map

Rail

Metro operates the Metro rail system, which is exclusively within Los Angeles County. The Metro rail system consists of the following lines: Red, Purple, Blue, Green, Gold and Expo. The hub of the system is in Downtown Los Angeles at Union Station. The Metro lines that primarily serve the unincorporated areas include the Metro Blue, Green and Gold Lines. The Metro Blue Line stations that serve the unincorporated areas include: Slauson, Florence, Firestone, Willowbrook and Del Amo. The Aviation/LAX, Vermont, Hawthorne, and Rosa Parks stations along the Metro Green Line also serve the unincorporated areas. The Gold Line has five stations that serve the unincorporated areas: Indiana, Maravilla, East LA Civic Center, Atlantic and Sierra Madre Villa.

Two additional rail service operators that provide services in Los Angeles County are Metrolink and Amtrak. The Southern California Regional Rail Authority (SCRRA) operates the 416-mile Metrolink commuter rail system, which has its hub in Downtown Los Angeles at Union Station and extends to Ventura, San Bernardino, Riverside, Orange, and San Diego counties, and serves some of the unincorporated areas. There is one Metrolink station located in the unincorporated community of Acton, on the Antelope Valley Line. Amtrak provides interstate service from points around the country to Union Station, as well as regional service between major cities throughout California.

Bus

With many regional and municipal operators providing bus services, buses provide the majority of public transit service in Los Angeles County. Examples of these operators include Torrance Transit, Foothill Transit, Santa Clarita Transit, and the Antelope Valley Transit Authority. According to Metro's 2009 Long Range Transportation Plan, the transit providers in Los Angeles County collectively operate 4,000 buses and serve 1.6 million bus riders daily.

The Metro bus system is the largest in Los Angeles County. Metro operates the Metro Rapid Bus service, which runs on select surface street corridors with fewer stops and electronic signal switching devices to expedite traffic flow, and the Metro Express Bus service, which are express bus routes for a portion of the route and then local or limited routes in other areas. Metro also operates two bus rapid transitways: the Orange Line and Silver Line. The Metro Orange Line operates on a dedicated bus lane in the San Fernando Valley and also includes a separated bike path that runs along part of the route. The Metro Silver Line operates between Downtown Los Angeles and the Artesia Transit Center.

Furthermore, the Los Angeles County Department of Public Works (DPW) operates fixed route shuttle services in the following unincorporated areas: Willowbrook and King Medical Center Shuttle services in Willowbrook; Athens Shuttle service in West Athens-Westmont; Lennox Shuttle service in Lennox; Florence-Firestone/Walnut Park Shuttle service in Florence-Firestone and Walnut Park; El Sol Shuttle service in East Los Angeles; Sunshine Shuttle service in South Whittier; Avocado Heights/Bassett/West Valinda Shuttle service in Avocado Heights, Bassett and West Valinda; East Valinda Shuttle service in East Valinda; Edmund D. Edelman's Children's Court Shuttle service in East Los Angeles; Los Nietos Shuttle service in Los Nietos; and Acton/Agua Dulce Shuttle service in Acton and Agua Dulce. For detailed information on these shuttle services, please visit http://www.lagobus.info. For data on monthly average boardings for the County shuttles, please refer to Appendix D.

Paratransit

Paratransit is an alternative mode of flexible transportation that does not follow fixed routes or schedules. Demand-responsive paratransit contractors are used to meet the needs of seniors and mobility-impaired individuals living in the unincorporated areas.

The Whittier paratransit service operating in the unincorporated communities of North Whittier, West Whittier–Los Nietos and South Whittier–Sunshine Acres has, on average, the highest number of monthly boardings at 3,207. Unincorporated East Los Angeles has the second highest demand with 2,049 boardings on average per month. For detailed information on the County's paratransit services, please visit http://www.lagobus.info. For additional data on average monthly boardings, please refer to Appendix D.

Bikeways

The State Vehicle Code allows roadways to be used by bicyclists. Therefore, the entirety of surfaced roadways, excluding freeways, may be used by the bicycling public even though they are not all identified as bikeways. However, the lack of public awareness and the safety concerns associated with road sharing create a need for bikeways with a grade separation, lane delineation, or designated trail/path construction for bicycle users.

Bicycle Master Plan

The Los Angeles County Bicycle Master Plan, adopted in March 2012, provides policy guidance for building a comprehensive bicycle network throughout the unincorporated areas. The Bicycle Master Plan identifies bikeways and transportation systems that are available for use by bicyclists, such as roadways with bike lanes or designated bike routes, and dedicated off-road bike paths, such as bike paths along the flood control channels. The purpose of the Bicycle Master Plan is to: 1) guide the development of infrastructure, policies and programs that improve the bicycling environment; 2) depict the general location of planned bikeway routes; and 3) provide for a system of bikeways that is consistent with the General Plan.

The Bicycle Master Plan maps depict bikeways along roadways in the unincorporated areas and along rivers, creeks, and flood control facilities countywide. These bikeways may be used for both recreational use and commuter travel.

The Bicycle Master Plan also includes data on collisions involving bicyclists and motor vehicles in the unincorporated areas between the years 2004 and 2009. In total, there were 1,369 collisions, including 25 fatalities. One of the goals of the Bicycle Master Plan is to reduce the number of collisions by making bicycling more safe through the implementation of education programs and

network improvements. For more detailed data on collisions in the unincorporated areas, please refer to Appendix D. To view the Bicycle Master Plan, including policies, programs, and the mapped bicycle network, please visit DPW's Bicycle Master Plan web site at http://dpw.lacounty.gov/go/bikeplan.

Pedestrian Networks

The diversity of communities in Los Angeles County creates distinct conditions, opportunities and challenges for pedestrians. There are a number of trails and paths that are available for use by pedestrians, such as sidewalks, hiking trails, over and under passes, and skywalks. Together, these systems constitute a network for accommodating pedestrian travel.

Community Pedestrian Plans

The County is committed to improving the environment to allow for increased alternative transportation uses. The General Plan includes a program to prepare community pedestrian plans for the unincorporated areas that will set standards for sidewalks, street crossings, sidewalk continuity, street connectivity, and topography. The community pedestrian plans will emphasize the connectivity of pedestrian paths to and from public transportation, major employment centers, shopping centers, and government buildings.

For more information on community pedestrian plans, please refer to Chapter 16: General Plan Implementation Programs.

Freeway, Highway, and Local Road Networks

The highway network is comprised of the State Highway System, which consists of 915 freeway and highway miles, and includes U.S. Interstate freeways and state-maintained freeways and highways, High Occupancy Vehicle (HOV) lanes, and county and city highways. The California Department of Transportation (Caltrans) is the state agency responsible for the maintenance of freeways and highways. Caltrans estimates that on average there are more than 100 million vehicle miles traveled per day in Los Angeles County via the State Highway System. Figure 7.2 is a map of the Highways and Freeways System that serves Los Angeles County.

Figure 7.2: Highways and Freeways Map

The County is responsible for the design, construction, operation, maintenance, and repair of roads in the unincorporated areas, as well as in a number of local jurisdictions that contract with the County for these services. DPW maintains over 3,100 miles of major roads and local streets in the unincorporated areas and over 1,700 miles in 22 cities.

Highway Plan

The Los Angeles County Highway Plan provides policy guidance for building a comprehensive highway network throughout the unincorporated areas. The Highway Plan provides a highway system that is consistent with and supportive of the goals and policies outlined in the Land Use Element. More specifically, the Highway Plan maintains right-of-way corridors to ensure space for future facility improvements to accommodate alternative modes. This is important in urbanized areas, which often have limited room for expansion, but are in need of additional facilities and improvements, such as bike lanes, sidewalks, and bus service. This is also important in rural areas

to accommodate trails and landscaping, which encourage active transportation, provide shade, and reduce runoff from pollutants.

The purpose of the Highway Plan is to: 1) depict the general location of planned highway routes; 2) provide a means for protecting highway rights-of-way within the unincorporated areas; 3) establish a plan and process for coordinating highway policies with neighboring cities and counties; and 4) provide for a system of highways that is consistent with the General Plan.

The Los Angeles County Interdepartmental Engineering Committee (IEC), which is comprised of the Director of Planning, the Road Commissioner, and the County Engineer, is charged with maintaining the Highway Plan.

Figure 7.3 shows the Highway Plan, which includes locations of existing and proposed major arterial highways. Although the County has no jurisdiction over roads in the 88 cities, or the freeways and other state routes maintained by Caltrans, these roadways are included in the map for reference and visual continuity. The Highway Plan roadway classifications and descriptions are provided in Table 7.1.

Figure 7.3: Highway Plan Policy Map

Table 7.1: Highway Plan Roadway Classifications

Classification	Description
Major Highway	This classification includes urban highways that are of countywide significance and are, or are projected to be, the most highly traveled routes. These roads generally require four or more lanes of moving traffic, channelized medians and, to the extent possible, access control and limits on intersecting streets. This width may vary to meet extraordinary circumstances. Also classified as major highways are key connectors, non-urban access ways and recreational roads. The bulk of these routes are not planned for urban type improvement. However, the full major highway right-of-way width of 100 feet or more is generally required to maintain adequate safety and vehicular capacity.
Secondary Highway	Secondary highways include urban routes that serve or are planned to serve an areawide or countywide function, but are less heavily traveled than major highways. In a few cases, routes that carry major highway levels of traffic are classified as secondary highways because it is impractical to widen them to major highway standards. In addition to the countywide function, secondary highways frequently act as oversized collector roads that feed the countywide system. In this capacity, the routes serve to remove heavy traffic from local streets, especially in residential areas. In urban areas, secondary highways normally have 4 moving lanes of traffic on 80 feet of right-of-way. However, configuration and width may vary with traffic demand and conditions on the ground. Access control, especially to residential property and minor streets, is desirable along these roads.
Limited Secondary Highway	Limited secondary highways are located in remote foothill, mountain and canyon areas. Their primary function is to provide access to low-density settlements, ranches and recreational areas. The standard improvement for limited secondary highways is 2 traffic lanes on 64 feet of right-of-way. Typically, such improvements

	consist of 28-30 feet of pavement with graded shoulders. Left-turn pockets and passing lanes may be provided when required for traffic safety. The right-of-way may be increased to 80 feet for additional improvements where traffic or drainage conditions warrant. A uniform building setback shall be established 40 feet from the centerline of all limited secondary highways in order to preserve proper sight distances and to help maintain a rural appearance adjacent to the roadway. This setback shall be in addition to any yard requirement contained in the Zoning Code.
Parkway	The parkway classification is applied to urban and non-urban routes that having park-like features either within or adjacent to the roadway.
Expressway	The expressway classification is primarily for through-traffic with full or partial control of access. Expressways can accommodate 6 to 10 traffic lanes. The width of right-of-way varies as necessary to incorporate these features, but shall not be less than 80 feet. Roadway improvements vary depending upon the composition and volume of traffic carried.

Level of Service

DPW uses level of service (LOS) to assess the congestion of roadways in the transportation system. Based on a roadway's volume-to-capacity ratio (the number of vehicles currently using the roadway compared to the ideal maximum number of vehicles that can efficiently use the roadway), a letter designation is assigned that represents the traffic flow conditions, or LOS. Letter designations "A" through "F" represent progressively declining traffic flow conditions. LOS designations indicate whether the roadways are operating in excess of their intended capacity. Acceptable LOS is determined on a case by case basis, but generally, Level D is the desired minimum LOS. In some instances, LOS below D will be deemed acceptable in order to further other General Plan goals and policies, such as those that protect environmentally sensitive areas, promote active transportation, and encourage infill development, particularly within the Transit Oriented Districts.

Table 7.2 provides the definitions for LOS A-F, which are based on the definitions in the Transportation Research Board's Highway Capacity Manual.

Table 7.2: Level of Service Definitions

LOS	Type of Flow		Description
A	Free flow		Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Control delay at intersections is minimal. The travel speed exceeds 85% of the base free-flow speed.
B	Stable flow		The ability to maneuver within the traffic stream is only slightly restricted and control delay at intersections is no significant. The travel speed is between 67% and 85% of the base free-flow speed.
C	Stable flow		The ability to maneuver and change lanes at midsegment locations may be more restricted than at LOS B. Longer queues at intersections may contribute to lower travel speeds. The travel

			speed is between 50% and 67% of the base free-flow speed.
D	Approaching unstable flow		Small increases in flow may cause substantial increases in delay and decreases in travel speed. The travel speed is between 40% and 50% of the base free-flow speed.
E	Unstable flow		Significant delay is commonly experienced. The travel speed is between 30% and 40% of the base free-flow speed.
F	Forced flow		Congestion is likely occurring at intersections, as indicated by high delay and extensive queuing. The travel speed is 30% or less of the base free-flow speed.

Source: Highway Capacity Manual, 2010

Although DPW utilizes the above described LOS criteria for assessing the performance of, and determining impacts to, roadways, DPW is currently working on the development of a multimodal transportation planning function. This effort will ensure that transportation facilities are planned, designed, and maintained to provide safe and efficient mobility for all users, including bicyclists, pedestrians, and motor vehicles. Please refer to Program M-4, Multimodal Transportation Planning Function in Chapter 16: General Plan Implementation Program, for more details.

Aviation Network

There are 15 public-use airports located in Los Angeles County and one military airport located on San Clemente Island, as shown in Figure 7.4. The majority of passenger air transportation is serviced through Los Angeles International Airport (LAX), Burbank Airport, and the Long Beach Airport. Table 7.3 is a list of the airports and owners.

Figure 7.4: Airports Map

Table 7.3: Los Angeles County Airports

Airport	Location	Owner
Agua Dulce Airport	Agua Dulce	Private
Burbank (Bob Hope) Airport	City of Burbank	Airport Authority
Brackett Field Airport	City of La Verne	Los Angeles County
Catalina Island Airport	Santa Catalina Island	Private
Compton/Woodley Airport	City of Compton	Los Angeles County
El Monte Airport	City of El Monte	Los Angeles County
Frederick Sherman Field	San Clemente Island	U.S. Navy
General William J. Fox Airfield Airport	City of Lancaster	Los Angeles County

Jack Northrup Field Airport (Hawthorne Municipal Airport)	City of Hawthorne	City of Hawthorne
Long Beach Municipal Airport (Daugherty Field Airport)	City of Long Beach	City of Long Beach
Los Angeles International Airport (LAX)	City of Los Angeles	City of Los Angeles (LAWA)
Santa Monica Municipal Airport	City of Santa Monica	City of Santa Monica
Palmdale Regional Airport	City of Palmdale	City of Los Angeles (LAWA)
Van Nuys Airport	City of Los Angeles, Van Nuys	City of Los Angeles (LAWA)
Whiteman Airport	City of Los Angeles, Pacoima	Los Angeles County
Torrance Municipal Airport-Zamperini Field	City of Torrance	City of Torrance

Freight Rail Network

Los Angeles County has an extensive rail network that is focused on the efficient and safe movement of goods throughout the region. An effective goods movement system requires the elimination of at-grade crossings, and the creation and operation of rail networks, such as the Alameda Corridor.

The Alameda Corridor is a 20-mile rail cargo corridor, with a 10-mile below-grade trench between the ports of Los Angeles and Long Beach and the central Los Angeles freight yard transfer stations. The Alameda Corridor has been instrumental in efficiently transporting goods from the ports to inland transfer stations. The Alameda Corridor East Project, which is an extension of the Alameda Corridor Project, covers the area from central Los Angeles eastward 35 miles through the San Gabriel Valley, past Pomona and onward to the transcontinental rail network. The $910 million endeavor of mobility and safety improvements includes signalization upgrades, roadway widening, and 20 grade separations.

Figure 7.5 shows the freight and passenger rail lines that run throughout Los Angeles County.

Figure 7.5: Freight and Passenger Rail Lines Map

Interstate, Highways, and Local Roads

The six-county SCAG region has about 53,400 road miles traversing incorporated and unincorporated areas, 1,630 miles of which are interstate and freeway type. Sections of Interstate-710, Interstate-605, State Route-60, and State Route-91 carry the highest volumes of truck traffic in the region, averaging over 25,000 trucks per day in 2008. Other major components of the regional highway network also serve significant numbers of trucks, including Interstate-5, Interstate-10, Interstate-15, and Interstate-210, with some sections carrying over 20,000 trucks per day. These roads carry a mix of local, domestic trade, and international cargoes. The arterial roadway system also plays a critical role, providing “last mile” connections to the ports, manufacturing facilities, intermodal terminals, warehouses, and distribution centers.

Supportive Facilities

Harbors

The ports of Los Angeles and Long Beach are key links in the global economy and can handle a variety of cargo, including containers, bulk products, and automobiles. Combined, they are one of the largest and most efficient international shipping ports in the country, and the fifth busiest container port in the world. According to SCAG, the ports handled just under 120 million metric tons of cargo imports and exports, valued at $336 billion in 2010. The ports also serve as a significant tourism driver, as the largest cruise ship terminal on the West Coast, serving over a million passengers per year.

Parking

A limited number of public parking lots are maintained in the unincorporated areas by a variety of agencies, including Caltrans, Metro, the Los Angeles County Departments of Beaches and Harbors, and DPW. Metrolink and Caltrans maintain park-and-ride lots adjacent to commuter rail stops. The County owns and operates the following four park-and-ride lots: Studio City (Ventura Boulevard); Pomona (Fairplex); San Dimas (Via Verde); and Acton (Acton/Vincent Grade Metrolink Station).

The County regulates on-street parking in certain high-traffic areas through restricted parking zones enforced by the Sheriff's Department and California Highway Patrol. In addition, the Los Angeles County Department of Regional Planning regulates parking for new developments by requiring an adequate number of spaces to meet anticipated demand.

Terminals

Terminal facilities provide multiple uses, from park-and-ride lots for daily commuter vehicles to the heavily used freight terminals that serve the ports. Fierce competition among West Coast cities for international trade business has led to the planning and construction of an efficient terminal network. The most notable terminal facilities are the intermodal terminal networks located in and around the ports of Los Angeles and Long Beach, the goods transfer stations located near Downtown Los Angeles, and several freight and trucking facilities in the City of Industry.

III. Issues

1. Providing Streets That Accommodate All Users

Historically, transportation planning and street design have focused on the automobile, resulting in hostile environments for pedestrians and bicyclists. In order to create safer places to walk and bicycle, as well as to take transit, more emphasis needs to be placed on these other viable modes of transportation. Furthermore, street designs should accommodate all users, including children, seniors, and the disabled. Streets designed to incorporate all potential users, including pedestrians, bicyclists, transit users, and conventional vehicular traffic are known as complete streets.

Aesthetics and function are also important considerations when creating comfortable places to walk, bicycle, and take transit. This can include landscaping, street furniture, and amenities, such as benches and shelters at transit stops.

In a jurisdiction as diverse as the unincorporated areas, the approach to complete streets must be flexible and street designs must be context-sensitive. For example, complete streets in rural areas,

such as the Antelope Valley, could look and feel very different from complete streets in urban communities, such as Willowbrook and Florence-Firestone.

2. Creating a Multimodal Transportation System

Single occupant vehicle use is associated with the highest level of land consumption among all transportation modes, and generates the highest level of environmental impacts. Estimates from the American Community Survey suggest that 74 percent of residents in the unincorporated areas drive alone to work, compared with 13 percent that carpool and 6 percent that use public transportation. The percentages for walking and bicycling are even lower, at less than 2 percent each. To encourage alternative modes and discourage single occupant vehicle use, the County can facilitate an interconnected, multimodal network of streets, alleys, paths, greenways, and waterways where people can choose to walk, bicycle, take transit or drive. The key to achieving a functional and sustainable multimodal transportation system is to provide efficient connections between different modes. For example, bicyclists can conveniently travel to farther destinations if they have the option to board the transit system with their bicycles. Multimodal options, such as bicycling and walking are cost-effective, energy efficient and healthy alternatives to driving. Additionally, creating bike-friendly and walkable communities is a critical component in meeting the County's greenhouse gas emission and energy reduction goals, while enhancing vibrant, livable communities.

Mobility management is an important component of a multimodal transportation system. Highway congestion results in major social costs, and long travel times and congestion increase energy and oil usage, exacerbate automobile emissions, and diminish the region's quality of life. In addition, long delays and congestion negatively impact the region's economy. According to SCAG, by failing to address congestion in the region, jobs have been lost–-every 10 percent decrease in congestion can bring an employment increase of about 132,000 jobs.

Mobility management is an important strategy for improving congestion and reducing VMTs. Mobility management strategies are designed to be used alone, or in concert with other policies to have a cumulative effect on the efficiency of the transportation system. Such strategies include the use of technologies in the development of transportation facilities and infrastructure, such as liquid and compressed natural gas, and hydrogen gas stations, Intelligent Transportation Systems (ITS), and electric car plug-in ports. Mobility management also refers to transportation demand management (TDM), which includes strategies that change travel behavior and discourage the single occupant driver, such as offering employer-based transit passes or increasing transit availability; regional carpooling programs; and parking management. One of the most effective TDM strategies is arguably congestion pricing.

Achieving a multimodal transportation system will require a greater investment in transit, pedestrian, and bicycle infrastructure. New proposals, such as tolling major freeways, double-decking highways, and/or raising the gas tax, all have varying levels of political and popular support. However, paying for transportation infrastructure will remain a critical planning issue. To plan efficient, functional and cost-effective transportation networks, including public transit, roadways, and alternative transportation, the County should leverage investment with the planning, financing and management of other jurisdictions' transportation efforts. The County must work with transportation planning agencies on infrastructure, capital improvements and programming in areas where the General Plan focuses growth.

3. Connecting Transportation and Land Use Planning

For any transportation system to be effective, healthy and sustainable, all aspects–streets, freeways, public transit, highways, sidewalks, bicycle facilities, and freight movement–must be coordinated with land use planning. Land use and mobility are inherently linked: low density sprawl with single use development encourages driving. Alternatively, denser, communities with a mix of land uses that encourage transit use, walking, and bicycling are healthier and sustainable.

Land use planning and urban design are important factors in developing transit use and multimodal transportation options. Historically, streets have been designed to move the maximum amount of automobile traffic. Congested roadways and high on-street parking demand create insufficient space to accommodate bike lanes. In addition, a frequent complaint of bicyclists is the absence of adequate facilities to secure bicycles at public and private buildings or facilities. Many of the commercial corridors in mature urbanized areas are underutilized and in need of redevelopment. Strengthening mixed land uses and promoting compact development in these areas, in concert with design standards for rights-of-way, can help encourage walking and bicycling for shorter trips, as well as make transit more accessible.

Because of the nature and financing of regional transportation networks, transportation planning is fragmented among many jurisdictions, agencies and County departments. Effective inter-jurisdictional collaboration, and public-private partnerships are essential to creating an efficient and multimodal transportation network.

4. Safe and Efficient Movement of Goods

The safe and efficient movement of goods is an important mobility issue that significantly impacts the economy. Goods movement has been negatively impacted by inefficient transportation networks. The ports, airports, rail lines and intermodal transit terminals have existing capacity constraints that undermine the efficiency and productivity of the goods movement system. In addition, the existing roadway and rail networks are reaching capacity. As a result, the system is susceptible to disruptions, which causes delays that reduce the quality of services and increase costs to consumers. Furthermore, the roadways and rail networks that accommodate the movement of goods are shared by motorists and passengers, which raises additional concerns over efficiency and safety.

The ports of Long Beach and Los Angeles are heavily investing in infrastructure to handle a projected doubling of container volumes. However, the ports have also been identified as one of the largest sources of air pollution in the region. In addition, terminal operations and supporting infrastructure are consumptive land uses, and are often characterized as having heavily polluting activities. The ports have created a Clean Air Action Plan in conjunction with the U.S. Environmental Protection Agency, the California Air Resources Board, and the South Coast Air Quality Management District to reduce emissions related to port operations.

The 2012–2035 RTP/SCS describes a goods movement system with initiatives and projects totaling nearly $50 billion through 2035 for SCAG's six-county region, including Los Angeles County. Key regional initiatives include a comprehensive system of zero- and/or near-zero-emission freight corridors, alleviation of major bottlenecks, a rail package totaling approximately $12 billion, and an environmental strategy to address emissions through both near term initiatives and a long term action plan for technology advancement. The comprehensive system of zero- and/or near-zero-emission freight corridors includes Interstate-710. The rail package includes main line capacity enhancements, on-dock and near-dock rail facility improvements, and 71 grade separations. In addition, critical projects to facilitate access to the ports (e.g., improvements to the Gerald Desmond Bridge), and to alleviate congestion at critical border crossings, are underway.

Regional Clean Freight Corridor System

In past RTPs, SCAG has envisioned a system of truck-only lanes extending from the ports to Downtown Los Angeles along Interstate-710, connecting to an east-west segment, and finally reaching Interstate-15 in San Bernardino County. Such a system would address the growing truck traffic on core highways throughout the region and serve key goods movement industries in a manner that mitigates impacts on communities and the environment.

East-West Freight Corridor

The 2012–2035 RTP/SCS identifies a corridor concept that connects to the north end of the I-710 freight corridor and roughly parallel the Union Pacific Railroad Los Angeles Subdivision before finally following a route adjacent to SR-60 just east of SR-57. The potential use of two non-roadway routes provides an opportunity to move the facility away from neighborhoods and closer to the industrial activities that it would serve. Utilizing a right-of-way of approximately 100 feet, the bi-directional corridor would be restricted to truck traffic and have limited ingress/egress points. The East-West Freight Corridor would be a catalyst for the use of zero-and/or near-emission truck technologies, improving air quality for communities near the corridor and throughout the region.

Bottleneck Relief

The 2012 RTP/SCS allocates an estimated $5 billion toward goods movement bottleneck relief strategies. Examples of bottleneck relief strategies include ramp metering, extension of merging lanes, ramp and interchange improvements, capacity improvements, and auxiliary lane additions. Additional project concepts will continue to be refined through SCAG's Comprehensive Regional Goods Movement Plan and Implementation Strategy.

Truck Corridors and Localized Arterials

While SCAG's effort is regional in scope, Metro is working to identify a County-Wide Strategic Truck Arterial Network (CSTAN) for Los Angeles County. The CSTAN will be informed by collection of data including truck counts on arterials, existing truck routes, connectivity to goods movement facilities, the location of bottlenecks, identification of land uses along truck routes and where they overlap with active transportation areas. The information is expected to guide funding priorities for projects such as roadway widening, road repair and intersection improvements while minimizing potential conflicts between trucks and active transportation facilities.

While truck route studies have been performed at the council of government level, Metro is coordinating a countywide effort in recognition that truck routes frequently traverse subregions. As a key stakeholder and steward of public rights-of-way in the unincorporated areas, DPW serves as a technical advisor to the CSTAN program.

Air Travel and Cargo

SCAG expects air travel in the region to continue to grow. LAX, for instance, is the sixth busiest airport in the world and third busiest in the United States, offering more than 565 daily flights to 81 domestic cities and more than 1,000 weekly nonstop flights to 66 international destinations on more than 75 air carriers. It ranks 13th in the world in the amount of air cargo tonnage handled. In 2010, LAX served more than 59 million passengers, processed more than 1.9 million tons of air cargo valued at nearly $84 billion, and handled 575,835 aircraft operations (landings and takeoffs).

A $4.11 billion capital improvement program is underway at LAX, generating nearly 40,000 local jobs. The program's centerpiece is the $1.5-billion Bradley West Project with new gates for the latest-generation aircraft; new concourses and seating areas; new retail and food and beverage offerings; and expanded areas for more efficient security screening, immigration and customs processing. There also are several major airfield and facility projects, including a new Central Utility Plant, new taxiways and taxi lanes, and multi-million-dollar renovations--undertaken by both Los Angeles World Airports (LAWA) and the airlines--to other terminals.

5. Impacts of Transportation on Natural and Community Resources

Transportation systems, goods movement activities, and automobile use directly affect quality of life. This includes traffic congestion, truck intrusion into neighborhoods, safety, land use incompatibility, poor air quality and related health impacts, restricted mobility and delay at rail crossings, noise and vibration impacts, and visual impacts. Significant short- and long-term air quality impacts directly result from goods movement activities, such as emissions from ocean ships, diesel trucks, as well as increased auto-emissions, which in turn contributes to climate change.

The expansion and operation of transportation systems, which invariably affect biological resources and water quality, can be mitigated to lessen the negative impacts on resources. One key ecological issue is the effect of increased runoff from paved surfaces, which increases sediment movement, destroys aquatic habitat, and redistributes road-source pollutants. A second crucial ecological issue is potential negative impacts of human transportation systems on biological resources. Human transit is often responsible for transporting non-native species to ecosystems that do not have any natural defenses against the new threats. At the same time, transit infrastructure creates physical barriers across wildlife habitats and corridors that can reduce the mobility of local species, contribute toward mortality, and threaten genetic diversity. As discussed in the Public Services and Facilities Element, the majority of stormwater runoff is discharged directly into the Pacific Ocean. The General Plan provides policies that support transportation systems that treat and infiltrate stormwater runoff to mitigate the environmental impacts of runoff.

IV. Goals and Policies

Goal M 1: Street designs that incorporate the needs of all users.	
Topic	**Policy**
Complete Streets	Policy M 1.1: Provide for the accommodation of all users, including pedestrians, motorists, bicyclists, equestrians, users of public transit, seniors, children, and persons with disabilities when requiring or planning for new, or retrofitting existing, roads and streets.
	Policy M 1.2: Ensure that streets are safe for sensitive users, such as seniors and children.
	Policy M 1.3: Utilize industry standard rating systems, such as the Institute for Sustainable Infrastructure (ISI) Rating System, to assess sustainability and effectiveness of street systems for all users.
Goal M 2: Interconnected and safe bicycle- and pedestrian-friendly streets, sidewalks, paths and trails that promote active transportation and transit use.	
Topic	**Policy**
Active Transportation Design	Policy M 2.1: Design streets that accommodate pedestrians and bicyclists, and reduce motor vehicle accidents through a context-sensitive process that addresses the unique characteristics of urban, suburban, and rural communities.
	Policy M 2.2: Accommodate pedestrians and bicyclists, and reduce motor vehicle accidents by implementing the following street designs, whenever appropriate and feasible: • Lane width reductions to 10 or 11 feet in low speed environments with a low volume of heavy vehicles. • Wider lanes may still be required for lanes adjacent to the curb, and where buses and trucks are expected. • Low-speed designs. • Access management practices developed through a community-driven process. • Back in angle parking at locations that have available roadway width and bike lanes, where appropriate.

	Policy M 2.3: Accommodate pedestrians and bicyclists, and reduce motor vehicle accidents by implementing the following intersection designs, whenever appropriate and feasible: • Right angle intersections that reduce intersection skew. • Smaller corner radii to reduce crossing distances and slow turning vehicles. • Traffic calming measures, such as bulb-outs, sharrows, medians, roundabouts, and narrowing or reducing the number of lanes (road diets) on streets. • Crossings at all legs of an intersection. • Shorter crossing distances for pedestrians. • Right-turn channelization islands. Sharper angles of slip lanes may also be utilized. • Signal progression at speeds that support the target speed of the corridor. • Pedestrian push buttons when pedestrian signals are not automatically recalled. • Walk interval on recall for short crossings. • Left-turn phasing. • Prohibit right turn on red. • Signs to remind drivers to yield to pedestrians.

	Policy M 2.4: Ensure a comfortable walking environment for pedestrians by implementing the following, whenever appropriate and feasible: • Designs that limit dead-end streets and dead-end sidewalks. • Adequate lighting on pedestrian paths, particularly around building entrances and exits, and transit stops. • Designs for curb ramps, which are pedestrian friendly and compliant with the American Disability Act (ADA). • Perpendicular curb ramps at locations where it is feasible. • Pedestrian walking speed based on the latest standard for signal timing. Slower speeds should be used when appropriate (i.e., near senior housing, rehabilitation centers, etc.) • Approved devices to extend the pedestrian clearance times at signalized intersections. • Accessible Pedestrian Signals (APS) at signalized intersections. • Pedestrian crossings at signalized intersections without double or triple left or right turn lanes. • Pedestrian signal heads, countdown pedestrian heads, pedestrian phasing and leading pedestrian intervals at signalized intersections. • Exclusive pedestrian phases (pedestrian scrambles) where turning volume conflicts with very high pedestrian volumes. • Advance stop lines at signalized intersections. • Pedestrian Hybrid Beacons. • Medians or crossing islands to divide long crossings. • High visibility crosswalks. • Pedestrian signage. • Advanced yield lines for uncontrolled crosswalks. • Rectangular Rapid Flashing Beacon or other similar approved technology at locations of high pedestrian traffic. • Safe and convenient crossing locations at transit stations and transit stops located at safe intersections.

	Policy M 2.5: Ensure a comfortable bicycling environment by implementing the following, whenever appropriate and feasible: • Bicycle signal heads at intersections. • Bicycle signal detection at all signalized intersections. • Wayfinding signage. • Road diet techniques, such as lane narrowing, lane removal, and parking removal/restriction. • Appropriate lighting on all bikeways, including those in rural areas. • Designs, or other similar features, such as: shoulder bikeways, cycle tracks, contra flow bike lanes, shared use paths, buffered bike lanes, raised bike lanes, and bicycle boulevards.
	Policy M 2.6: Encourage the implementation of future designs concepts that promote active transportation, whenever available and feasible.
	Policy M 2.7: Require sidewalks and bikeways to accommodate the existing and projected volume of pedestrian and bicycle activity, considering both the paved width and the unobstructed width available for walking.
	Policy M 2.8: Connect pedestrian and bicycle paths to schools, public transportation, major employment centers, shopping centers, government buildings, residential neighborhoods, and other destinations.
	Policy M 2.9: Encourage the planting of trees along streets and other forms of landscaping to enliven streetscapes by blending natural features with built features.
	Policy M 2.10: Encourage the provision of amenities, such as benches, shelters, secure bicycle storage, and street furniture, and comfortable, safe waiting areas near transit stops.
	Policy M 2.11: Promote the continuity of streets and sidewalks through design features, such as limiting mid-block curb cuts, encouraging access through side streets or alleys, and promoting shorter block lengths.
Goal M-3: Streets that incorporate innovative designs.	
Topic	**Policy**
Innovative Street Design	Policy M 3.1: Facilitate safe roadway designs that protect users, preserve state and federal funding, and provide reasonable protection from liability.
	Policy M 3.2: Consider innovative designs when part of an accepted standard, or when properly vetted through an appropriate engineering/design review, in compliance with all state and federal laws.

	Policy M 3.3: Complete the following studies prior to the implementation of innovative design concepts: • An analysis of the current and future context of the community and neighborhood in which they are proposed; • A balanced assessment of the needs of all users and travel modes (i.e., pedestrian, bicycle, transit, vehicular, and equestrian, where appropriate); • A technical assessment of the operational and safety characteristics for each mode; and • A consistency check with transportation network plans, including the Highway Plan, Bicycle Master Plan, and Community Pedestrian Plans.
	Policy M 3.4: Support legislation that minimizes or eliminates liability associated with the implementation of innovative street designs that accommodate all users.
Goal M 4: An efficient multimodal transportation system that serves the needs of all residents.	
Topic	**Policy**
Transit Efficiency, Multimodal Transportation	Policy M 4.1: Expand transportation options that reduce automobile dependence.
	Policy M 4.2: Expand shuttle services to connect major transit centers to community points of interest.
	Policy M 4.3: Maintain transit services within the unincorporated areas that are affordable, timely, cost-effective, and responsive to growth patterns and community input.
	Policy M 4.4: Ensure expanded mobility and increase transit access for underserved transit users, such as seniors, students, low income households, and persons with disabilities.
	Policy M 4.5: Encourage continuous, direct routes through a connected system of streets, with small blocks and minimal dead ends (cul-de-sacs).
	Policy M 4.6: Support alternative LOS standards that account for a multimodal transportation system.
	Policy M 4.7: Maintain a minimum LOS D, where feasible; however, allow LOS below D on a case by case basis in order to further other General Plan goals and policies, such as those related to environmental protection, infill development, and active transportation.
	Policy M 4.8: Provide and maintain appropriate signage for streets, roads and transit.
	Policy M 4.9: Ensure the participation of all potentially affected communities in the transportation planning and decision-making process.
	Policy M 4.10: Support the linkage of regional and community-level transportation systems, including multimodal networks.
	Policy M 4.11: Improve the efficiency of the public transportation system with bus lanes, signal prioritization, and connections to the larger regional transportation network.

	Policy M 4.12: Work with adjacent jurisdictions to ensure connectivity and the creation of an integrated regional network.
	Policy M 4.13: Coordinate with adjacent jurisdictions in the review of land development projects near jurisdictional borders to ensure appropriate roadway transitions and multimodal connectivity.
	Policy M 4.14: Coordinate with Caltrans on mobility and land use decisions that may affect state transportation facilities.
Travel Demand Management	Policy M 4.15: Reduce vehicle trips through the use of mobility management practices, such as the reduction of parking requirements, employer/institution based transit passes, regional carpooling programs, and telecommuting.
	Policy M 4.16: Promote mobility management practices, including incentives to change transit behavior and using technologies, to reduce VMTs.
Goal M 5: Land use planning and transportation management that facilitates the use of transit.	
Topic	**Policy**
Land Use and Transportation	Policy M 5.1: Facilitate transit-oriented land uses and pedestrian-oriented design to encourage transit ridership.
	Policy M 5.2: Implement parking strategies that facilitate transit use and reduce automobile dependence.
	Policy M 5.3: Maintain transportation right-of-way corridors for future transportation uses, including bikeways, or new passenger rail or bus services.
Transportation Funding	Policy M 5.4: Support and pursue funding for the construction, maintenance and improvement of roadway, public transit, pedestrian and bicycle transportation systems.
	Policy M 5.5: Encourage financing programs, such as congestion pricing, bonding and increasing parking costs, to implement transportation systems and facilities.
Goal M 6: The safe and efficient movement of goods.	
Topic	**Policy**
Goods Movement	Policy M 6.1: Maximize aviation and port system efficiencies for the movement of people, goods and services.
	Policy M 6.2: Support the modernization of aviation systems, including LAX.
	Policy M 6.3: Designate official truck routes to minimize the impacts of truck traffic on residential neighborhoods and other sensitive land uses.
	Policy M 6.4: Minimize noise and other impacts of goods movement, truck traffic, deliveries, and staging in residential and mixed-use neighborhoods.

	Policy M 6.5: Support infrastructure improvements and the use of emerging technologies that facilitate the clearance, timely movement, and security of trade.
	Policy M 6.6: Preserve property for planned roadway and railroad rights-of-way, marine and air terminals, and other needed transportation facilities.
Goal M 7: Transportation networks that minimizes negative impacts to the environment and communities.	
Topic	**Policy**
Environmentally Sensitive Transportation Design	Policy M 7.1: Minimize roadway runoff through the use of permeable surface materials, such as porous asphalt and concrete materials, wherever feasible.
	Policy M 7.2: Encourage the creation of wildlife underpasses and overpasses, fencing, signage, and other measures to minimize impacts to wildlife at junctures where transit infrastructure passes through or across sensitive habitats.
	Policy M 7.3: Encourage the use of sustainable transportation facilities and infrastructure technologies, such as liquid and compressed natural gas, and hydrogen gas stations, ITS, and electric car plug-in ports.
	Policy M 7.4: Where the creation of new or the retrofit of roadways or other transportation systems is necessary in areas with sensitive habitats, particularly SEAs, use best practice design to encourage species passage and minimize genetic diversity losses.
Rural Streets	Policy M 7.5: In rural areas, require rural highway and street standards that minimize the width of paving and the placement of curbs, gutters, sidewalks, street lighting, and traffic signals, except where necessary for public safety.

V. Mobility Element Implementation Programs

- Parking Ordinance
- Community Pedestrian Plans
- Safe Routes to School Program
- Multimodal Transportation Planning Function

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Boxes]

Model Design Manual for Living Streets

The Model Design Manual for Living Streets is a valuable resource for local jurisdictions looking to create streets that

are safe and comfortable for all users and all modes. It outlines various design features that not only accommodate cars, but also pedestrians, bicyclists, and transit riders. Street design features that help to create vibrant and attractive streets are also outlined in the manual.

The manual was funded by the Department of Health and Human Services through the Los Angeles County Department of Public Health and the UCLA Luskin Center for Innovation.

For more information please visit: http://www.modelstreetdesignmanual.com/

Green Streets

Green streets is a sustainable stormwater management and landscaping strategy that utilizes a combination of increased permeable surfaces and planted areas, soil filtration, vegetative bio-retention and underground stormwater retention basins to maximize groundwater recharge. Green streets not only improve water quality and drainage, but also improve mobility and promote complete streets through traffic calming. They also enhance the pedestrian experience through sustainable landscaping, such as bio-swales, street trees, rain gardens, and planters.

Chapter 8: Air Quality Element

I. Introduction

The South Coast Air Basin, which includes the majority of Los Angeles County, continues to have among the worst air quality ratings in the country. Additionally, climate change, which is primarily caused by an increase in greenhouse gas (GHG) emissions, is one of the most pressing environmental issues faced by all levels of government. Air pollution and climate change pose serious threats to the environment, economy, and public health.

The Air Quality Element summarizes air quality issues and outlines the goals and policies in the General Plan that will improve air quality and reduce greenhouse gas emissions. One sub element—the Community Climate Action Plan—supplements the Air Quality Element. This plan establishes actions for reaching the County's goals to reduce greenhouse gas emissions in the unincorporated areas.

II. Background

Air Pollutants

The air quality in Southern California does not meet state and federal standards. The American Lung Association consistently gives Los Angeles County failing grades in the amount of ozone and particulate pollution in the air. Although smog levels are impacted by seasons and weather patterns, smog is visible in the air on most days.

Los Angeles County is a large basin with the Pacific Ocean to the west, and several mountain ranges with 11,000 foot peaks to the east and south. Frequent sunny days and low rainfall contribute to ozone formation, as well as high levels of fine particles and dust. In addition, Los Angeles County is home to many diverse industries and the largest goods movement hub on the West Coast. In spite of emission controls that are among the most stringent in the country, power generation and petroleum refining continue to be among the largest stationary sources of air pollution in Los Angeles County.

Poor air quality is a measurable environmental hazard that impacts public health, welfare and the economy. The California Air Resources Board (CARB) has identified diesel particulate matter (PM) as representing 70 percent of the known cancer risk from air toxics in California. Diesel PM is primarily emitted from trucks, trains and ships, which puts those who live near ports and distribution centers at greater risk. A 2008 report by the Institute of Economic and Environmental Studies at California State University Fullerton found that California loses about $28 billion annually due to premature deaths and illnesses linked to ozone and particulates from sources in the South Coast and San Joaquin air basins. Most of those costs, about $25 billion, are connected to roughly 3,000 smog-related deaths in the State each year. Additional impacts include work and school absences, emergency room visits, asthma attacks and other respiratory illnesses.

Poor air quality in the region is attributed to emissions from human activities and natural sources, as well as geography, local weather and climate. Specific contributors to poor air quality include: natural factors, such as changes in the sun's intensity or slow changes in the Earth's orbit around the sun; natural processes within the climate system (e.g., changes in ocean circulation); human activities that change the atmosphere's composition (e.g., through the burning of fossil fuels); and human

activities that change the land surface (e.g., deforestation, reforestation, urbanization, desertification, etc.).

Federal, state and regional agencies regulate air pollutants and contaminants that harm human health. Regulations can include standard-setting, ambient monitoring, developing permitting programs, enforcement activities, and establishing economic incentives to reduce air pollution. As shown in Figure 8.1, Los Angeles County is divided into air basins, which are areas with similar meteorological and geographic conditions. The majority of Los Angeles County is in the South Coast Air Basin, with the area north of the San Gabriel Mountains located in the Mojave Desert Air Basin.

Figure 8.1: Air Basins Map

Criteria Air Pollutants

The Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set national ambient air quality standards for six common air pollutants. These pollutants are called criteria air pollutants because the EPA has developed human health-based and/or environmentally-based criteria (science-based guidelines) for setting permissible levels:

- Ozone (O_3)
- Particulate matter (PM)
- Carbon monoxide (CO)
- Nitrogen dioxide (NO_2)
- Sulfur dioxide (SO_2)
- Lead (Pb)

Of the six identified criteria air pollutants, particle pollution and ground-level ozone have the most widespread health impacts. The levels of ozone, particulate matter, and carbon monoxide in Los Angeles County continually exceed federal and state ambient air quality standards. Table8.1 is a summary of the primary sources and effects of the federally-identified criteria air pollutants.

Table 8.1: Primary Sources and Effects of Criteria Pollutants

Pollutants	Source	Los Angeles County Classification	Primary Health Effects
Ozone (O_3)	Atmospheric reaction of organic gases with nitrogen oxides in sunlight (“smog”)	Extreme Non-Attainment Area	Aggravation of respiratory and cardiovascular diseases; reduced lung function; increased cough and chest discomfort
Fine Particulate Matter (PM10 and PM 2.5)	Stationary combustion of fuels; construction activities; industrial processes; atmospheric chemical reactions	Serious Non-Attainment Area	Reduced lung function; aggravation of respiratory and cardio-respiratory diseases; increased mortality rate; reduced lung function growth in children.

Carbon Monoxide (CO)	Incomplete combustion of fuels, such as motor vehicle exhaust	Serious Non-Attainment Area	Aggravation of some heart diseases.
Nitrogen Dioxide (NO_2)	Motor vehicle exhaust; high temperature stationary combustion; atmospheric reactions	*Concentrations have not exceeded federal standards since 1991, but emissions remain a concern because of their contribution to O_3 and PM	Aggravation of respiratory diseases.
Sulfur Dioxide (SO_2)	Combustion of sulfur containing fossil fuels; smelting of sulfur bearing metal ores; industrial processes	Attainment Area	Aggravation of respiratory diseases (eg., asthma, emphysema); reduced lung function.
Lead (Pb)	Contaminated soil	Attainment Area	Behavioral and hearing disabilities in children; nervous system impairment.

Source: South Coast Air Quality Management District, 2005.

Air Quality Management Plans

The long-term trend of air quality in Southern California shows continuous improvement since the 1970s, as a direct result of a comprehensive, multi-year strategy of reducing air pollution from all sources as outlined in air quality management plans (AQMPs). To ensure continued progress toward clean air, the SCAQMD in conjunction with the CARB, SCAG, and the EPA, prepared the 2012 AQMP that employs the latest science and analytical tools, and incorporates a comprehensive strategy to meet all federal criteria pollutant standards within the timeframes allowed under the federal Clean Air Act. The AQMP is updated every three years. For more information, please visit http://aqmd.gov/aqmp.

Toxic Air Contaminants

Many toxic air contaminants (TACs), such as formaldehyde and methanol, do not have federal or state ambient air quality standards. However, exposure to TACs is associated with elevated risk of cancer, birth defects, genetic damage, and other adverse health effects.

TACs are regulated by technology-based requirements that are enforced at the state and local level. In California, the Air Toxics Program and the Air Toxics “Hot Spots” Information and Assessment Act regulate TACs. In Los Angeles County, operators of certain types of facilities must submit emissions inventories. The Air Toxics Program categorizes each facility as being high, intermediate, and low-priority based on the potency, toxicity, quantity, and volume of its emissions. If the risks are above established levels, facilities are required to notify surrounding populations and to develop and implement a risk reduction plan.

Greenhouse Gases

GHGs in the atmosphere affect the Earth’s heat balance by absorbing infrared radiation. This layer of gases prevents the escape of heat, similar to the function of a greenhouse. According to the EPA,

the principal GHGs that enter the atmosphere because of human activities are carbon dioxide, methane, nitrous oxide, and fluorinated gases.

GHGs contribute to the destruction of the Earth's naturally-occurring ozone, which provides protection from the damaging effects of solar ultraviolet radiation. The biggest contributors to ozone depletion are chlorofluorocarbons (CFCs), halons, carbon tetrachloride, methyl chloroform, and other halogenated compounds.

Climate Change

Climate change refers to any significant change in measures of climate (such as temperature, precipitation, or wind) lasting for an extended period (decades or longer). While climate change is not solely the result of poor air quality, the two have many common causes and effects.

Scientists believe that the Earth is warming faster than at any time in the previous 1,000 years. According to the California Energy Commission, the average global surface temperature has increased by 1.1 degrees Fahrenheit since the 19th century, and the 10 warmest years of the last century all occurred within the last 15 years.

The impacts of climate change are exacerbated by increased emissions during warm weather. Warmer temperatures cause increased energy consumption through the use of air conditioners, which increases emissions from power plants and vehicles. Climate change causes warming, drying, and increased winds that result in hotter, harder to control wildfires. These wildfires result in increased levels of fine particulate matter that could also exceed state and federal standards and harm the public.

Legislation

The Global Warming Solutions Act of 2006 (AB 32) manages and reduces greenhouse gas emissions in California. AB 32 requires that CARB establish a comprehensive program of regulatory and market mechanisms to reduce greenhouse gas emissions to 1990 levels by the year 2020.

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), is one of many bills that implement AB 32, and requires CARB to develop regional greenhouse gas emission reduction targets for automobile and light trucks. It requires the 18 metropolitan planning organizations in California, such as the Southern California Association of Governments (SCAG), to coordinate land use, transportation and housing strategies, and prepare a Sustainable Communities Strategy (SCS) to reduce the amount of VMTs in their respective regions and demonstrate their ability to meet CARB's targets. SCAG adopted its SCS as part of its 2012 RTP. For more information on the 2012 RTP/SCS, please visit SCAG's web site at http://www.scag.ca.gov.

Los Angeles County Energy and Environmental Program

In 2006, the Board of Supervisors adopted an Energy and Environmental Program (EEP) for the development and enhancement of energy conservation and environmental programs for County departments. These programs contribute to the County's efforts to reduce communitywide GHGs and GHGs from County operations. The EEP consists of the following programs:

Energy and Water Efficiency

The EEP establishes a reduction target of 20 percent by 2015, and implements conservation monitoring practices and water and energy shortage awareness programs for County buildings and departments.

Green Building Construction and Operations

The County's Green Building Program consists of the Green Building, Low-Impact Development, and Drought Tolerant Ordinances. For more information on the County's environmental and sustainability programs, please visit http://green.lacounty.gov.

Environmental Stewardship

The Environmental Stewardship Program measures and reduces the County's environmental footprint, including the amount of greenhouse gases produced through direct and indirect County operations, and develops climate change-related policies.

Public Outreach and Education

The Public Outreach and Education Program utilizes the County's communication and outreach channels to share utility industry information, facilitate implementation of subsidy and assistance programs, and spread energy conservation practices throughout the region.

Los Angeles County Community Climate Action Plan

The Los Angeles County Community Climate Action Plan (CCAP) provides policy guidance for reducing GHG emissions generated within the unincorporated areas. The CCAP ensures that the County will be able to reduce its emissions to 1990 levels by 2020. The CCAP includes a comprehensive emissions inventory for the unincorporated areas and an analysis of the reduction needed to achieve County goals. It analyzes specific actions that result in reduced emissions and lays out a plan for their use and implementation. It also provides a mechanism for tracking and evaluating the County's progress in achieving its climate goals. The CCAP promotes development that is consistent with and supportive of the goals and policies of the General Plan. More specifically, it supports sustainable design and energy efficiency, as well as active and multi-modal transportation strategies to reduce VMT.

The purpose of the CCAP is to: 1) establish a baseline emissions inventory and reduction needed to meet County goals; 2) identify specific actions that will measurably reduce GHG emissions; 3) implement state and local level measures; and 4) provide a mechanism for ongoing tracking and updates to the CCAP. For more information, please visit http://planning.lacounty.gov/ccap.

III. Issues

1. Coordinating Land Use, Transportation and Air Quality Planning

Where and how land is developed can impact air quality, which impacts public health. People who live near major sources of air pollution are at a greater health risk. Sensitive receptors, or users of residences, schools, daycare centers, parks and playgrounds, or medical facilities, are particularly susceptible to the impacts of air pollution. Furthermore, CARB advises distancing requirements for

sources of air pollution, including freeways, distribution centers, ports, rail yards, refineries, chrome platers, dry cleaners that use perchloroethylene, and gasoline dispensing facilities.

Studies indicate that residing near sources of traffic pollution is associated with adverse health effects, such as the exacerbation of asthma, onset of childhood asthma, non-asthma respiratory symptoms, impaired lung function, reduced lung development during childhood, and cardiovascular morbidity and mortality. These associations are diminished with distance from the pollution source. Given the association between traffic pollution and health, many recommend that residences, schools and other sensitive uses be sited at least 500 feet from freeways, in particular. The Health Effects Institute (HEI) indicates that exposure to traffic pollution may occur up to 300 to 500 meters (approximately 984 to 1640 feet). The range reported by HEI reflects the variable influence of background pollution concentrations, meteorological conditions, and seasons. In addition, siting parks and active recreational facilities near freeways may increase public exposure to harmful pollutants, particularly while exercising. Studies show that heavy exercise near sources of traffic pollution may have adverse health effects.

In addition, there is a direct link between transportation activities and air pollution. According to the SCAQMD, mobile sources of pollution, such as cars, trucks, buses, construction equipment, trains, ships and airplanes, account for 60 percent of all smog producing emissions in the region. Additionally, highly congested freeways and highways further contribute to the conditions that produce air pollution. The continued population growth that is projected for Los Angeles County could overwhelm these air quality gains unless careful attention is paid to voluntary and regulatory measures that reduce transportation-related emissions.

Developing land and transportation systems to reduce the need for vehicle trips and provide alternative modes of transportation can improve air quality. In addition, integrating land use plans, transportation plans, and air quality management plans can help minimize exposure to toxic air pollutant emissions from industrial and other stationary sources. The Mobility Element and Land Use Element provide transportation-based policies to reduce VMTs, such as improving the efficiency of the County roadway network; mobility management, such as increased ridesharing and vanpools; and improving the jobs-housing balance.

2. Responding to Climate Change

Climate change will have a number of adverse impacts on ecosystems and the economy. Various scenarios predict intense flooding or prolonged droughts, higher temperatures that can lead to frequent wildfires, and rising sea levels that will affect low-lying coastal areas. A large GHG contributor is carbon dioxide, and in California, more than 35 percent of the fossil fuel emissions of carbon dioxide are related to transportation uses. As Los Angeles County has some of the highest rates of single occupant vehicle use, traffic congestion, and VMTs in the country, it is a significant contributor to climate change in the region.

IV. Goals and Policies

Goal AQ 1: Protection from exposure to harmful air pollutants.	
Topic	**Policy**
Air Pollutants	Policy AQ 1.1: Minimize health risks to people from industrial toxic or hazardous air pollutant emissions, with an emphasis on local hot spots, such as existing point sources affecting immediate sensitive receptors.
	Policy AQ 1.2: Encourage the use of low or no volatile organic compound (VOC) emitting materials.
	Policy AQ 1.3: Reduce particulate inorganic and biological emissions from construction, grading, excavation, and demolition to the maximum extent feasible.
	Policy AQ 1.4: Work with local air quality management districts to publicize air quality warnings, and to track potential sources of airborne toxics from identified mobile and stationary sources.
Goal AQ 2: The reduction of air pollution and mobile source emissions through coordinated land use, transportation and air quality planning.	
Topics	**Policy**
Air Quality, Land Use, and Transportation	Policy AQ 2.1: Encourage the application of design and other appropriate measures when siting sensitive uses, such as residences, schools, senior centers, daycare centers, medical facilities, or parks with active recreational facilities within proximity to major sources of air pollution, such as freeways.
	Policy AQ 2.2: Participate in, and effectively coordinate the development and implementation of community and regional air quality programs.
Goal AQ 3: Implementation of plans and programs to address the impacts of climate change.	
Topic	**Policy**
Climate Change	Policy AQ 3.1: Facilitate the implementation and maintenance of the Community Climate Action Plan to ensure that the County reaches its climate change and greenhouse gas emission reduction goals.
	Policy AQ 3.2: Reduce energy consumption in County operations by 20 percent by 2015.
	Policy AQ 3.3: Reduce water consumption in County operations.
	Policy AQ 3.4: Participate in local, regional and state programs to reduce greenhouse gas emissions.
	Policy AQ 3.5: Encourage maximum amounts of energy conservation in new development and municipal operations.

	Policy AQ 3.6: Support and expand urban forest programs within the unincorporated areas.

V. Air Quality Element Implementation Program

- PACE Financing Program

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Boxes]

Air Quality Regulating Agencies

The following are federal, state and local agencies that regulate air quality in the County:

U.S. Environmental Protection Agency

The U.S. Environmental Protection Agency (EPA) enforces the Clean Air Act through multiple programs, policies and regulations. The EPA focuses on pollution prevention and energy efficiency, indoor and outdoor air quality, industrial air pollution, pollution from vehicles and engines, radon, acid rain, stratospheric ozone depletion, climate change, and radiation protection. The EPA sets emissions standards for mobile sources, such as automobiles, aircraft, certain ships, and locomotives. Information on the programs and activities in EPA Region IX, which includes California, can be found on the EPA web site at http://www.epa.gov/region9.

California Air Resources Board

The California Air Resources Board (CARB) is responsible for the implementation of the Clean Air Act, which establishes state ambient air quality standards, and several programs related to emission reduction activities. Per AB 32, CARB is also responsible for establishing a program to track and report greenhouse gas emissions, and to regulate, measure, and enforce the required greenhouse gas emission reductions. Information on CARB's programs and activities can be found on their web site at http://www.arb.ca.gov.

South Coast Air Quality Management District (SCAQMD) and the Antelope Valley Air Quality Management District (AVAQMD)

The South Coast Air Quality Management District (SCAQMD) and the Antelope Valley Air Quality Management District (AVAQMD) are responsible for monitoring air quality as well as planning, implementing, and enforcing programs designed to attain and maintain state and federal ambient air quality standards in the region. The SCAQMD jurisdiction is approximately 10,743 square miles and includes the entire County except for the Antelope Valley, which is covered by the AVAQMD. The SCAQMD implements a wide range of programs and regulations that address point source pollution and mobile source emissions, and enforces air quality through inspections, fines, and educational training. Information on air quality management districts can be found on the AQMD web site, located at http://www.aqmd.gov.

Los Angeles Regional Collaborative for Climate Action and Sustainability (LARC)

LARC is a network of leaders from government, the business community, academia, labor, and environmental and community groups dedicated to encouraging greater coordination and cooperation in addressing climate change at the local and regional levels. The purpose of this collaboration is to share information, foster partnerships, and develop system-wide strategies to address climate change and promote a green economy through sustainable communities.

Chapter 9: Conservation and Natural Resources Element

I. Introduction

The County's role in the protection, conservation and preservation of natural resources and open space areas is vital as most of the natural resources and open space areas in Los Angeles County are located within the unincorporated areas. The County must act as the steward for Los Angeles County's natural resources and available open space areas, and conserve and protect these lands and resources from inappropriate development patterns.

The Conservation and Natural Resources Element guides the long-term conservation of natural resources and preservation of available open space areas. The Conservation and Natural Resources Element addresses the following conservation areas: Open Space Resources; Biological Resources; Local Water Resources; Agricultural Resources; Mineral and Energy Resources; Scenic Resources; and Historic, Cultural and Paleontological Resources.

II. Open Space Resources

This section addresses open space and natural area resources, and provides policies for preserving and managing dedicated open space areas through preservation, acquisition, and easements.

Background

Open space resources consist of public and private lands and waters that are preserved in perpetuity or for long-term open space and recreational uses. Existing open spaces in the unincorporated areas include County parks and beaches, conservancy lands, state parklands, and federal lands, such as national forests. Open space resources include private lands, such as deed-restricted open space parcels and easements. Various stakeholders share a responsibility to manage and preserve the available open space resources in the unincorporated areas.

Open Space Resources

Table 9.1 shows a summary of open space resources areas, by acreage and category.

Table 9.1: Unincorporated Los Angeles County Open Space Resources, in Acres

Open Space Resource Category	Acres
Conservancy Lands	48,271.79
County Lands	16,834.24
Federal Lands	679,629.58
Private Open Space Lands	9,181.03
State Lands	50,893.72

Total Open Space	804,810.36

Source: Los Angeles County Department of Regional Planning GIS Section

County Lands

The County Lands category includes open space areas owned and maintained by the Los Angeles County Department of Parks and Recreation (DPR): natural areas, wildlife and wildflower sanctuaries, and regional parks with significant natural resources. Examples include: Devil's Punchbowl Natural Area, High Desert Wildlife Sanctuaries, Whittier Narrows Recreation Area, Santa Fe Dam Recreation Area, and Schabarum Regional Park. Please refer to the Parks and Recreation Element, Appendix E and Appendix F for a full discussion on parkland resources.

Conservancy Lands

The unincorporated areas house scenic areas and diverse topographic, geologic and vegetative features that provide important habitat for wildlife, but also hold recreational value. State-created and non-profit conservancies play a critical role in preserving many of these areas through the acquisition and preservation of available open space areas. A list and descriptions of partnering conservancies and non-state public agencies can be found in Appendix E.

State Lands

The State Lands category includes open space and recreation areas owned and operated by the State. The California Department of Parks and Recreation has been instrumental in providing open space and recreation areas in the unincorporated areas. State parklands preserve important natural habitat areas, while providing both passive and active recreational opportunities that attract users throughout the region. The County is committed to preserving the quality of these areas by planning for compatible uses on adjacent lands. Examples of State Lands include Malibu Creek and Topanga State Park.

Federal Lands

The Federal Lands category refers to public lands managed by the federal government including:

National Forest

The Angeles National Forest and a small portion of the Los Padres National Forest encompass nearly 650,000 acres of land within the unincorporated areas. The Angeles National Forest stretches across Los Angeles County in two sections encompassing the San Gabriel Mountain Range, and is 1,018 square miles, or 25 percent of the land area of Los Angeles County. The U.S. Forest Service is responsible for managing public forest lands. Its mission is the stewardship of forest lands and resources through programs that provide recreation and multiple uses of natural resources, wilderness areas, and significant habitat areas. The U.S. Forest Service prepares and periodically updates the Land and Resource Management Plan as a policy guide for the use of lands in the national forests.

Within the boundaries of the national forests, nearly 40,000 acres are privately-owned. For these parcels, commonly referred to as in-holdings, the County retains responsibility for land use regulation.

National Recreation Area

The Santa Monica Mountains National Recreation Area is a part of the National Park System and is managed by the National Park Service. The Recreation Area preserves natural habitats, historical and cultural sites, offers recreational opportunities, and improves the air quality for the Los Angeles basin. Covered by chaparral, oak woodlands, and coastal sage scrub, it is home to many species that are listed as rare, threatened, or endangered.

Bureau of Land Management Land

The U.S. Bureau of Land Management (BLM) owns thousands of acres of open space land in the northern portion of Los Angeles County. These primarily desert lands serve to preserve federally-listed endangered and threatened species, and where compatible, provide recreational, agricultural, energy, and mining activities.

Private Open Space

Open space dedications are defined as privately-owned lands that have been set aside for permanent open space as part of a larger land development proposal.

The California Open Space Easement Act of 1969 sets forth general conditions governing the creation of recognized open space easements. Agreements or contracts establishing such easements specify the standards and conditions for uses and activities permitted within the area covered. Commitment of such lands to open space use in perpetuity is typically assured through deed-restrictions or dedication of construction rights secured at the time of development permit approval. Within dedicated open space areas, standards and conditions for use are specifically set forth as conditions of the zoning permit or subdivision tract map.

Open Space Resources Policy Map

Figure 9.1: Open Space Resources Policy Map

The Open Space Resources Policy Map, Figure 9.1, aids decision-makers in identifying and maintaining open space in an undisturbed state for public recreation, scenic enjoyment, and for the protection and study of natural ecosystems. Open Space Resources are part of the County's Special Management Areas. For more information on the Special Management Areas, please refer to the Land Use Element. Issues

1. Open Space Preservation

Increased population growth and ongoing development activities continue to impact open space areas. Dedicated open space areas are vital for the recreational, scenic and wilderness opportunities they provide. Leapfrog development and sprawl affect the ability to preserve biotic diversity and to provide appropriate recreational amenities. Because of sprawling development, open space areas are becoming increasingly fragmented or isolated, which decreases connectivity.

2. Open Space Acquisition and Planning

The acquisition and preservation of open space areas is a challenging and expensive endeavor. Additionally, there is no coordinated master plan to acquire, manage and preserve available open space areas. Working in partnership with conservancies and other stakeholders that can purchase and acquire available open space lands is an important part of the County's open space acquisition

strategy. A coordinated and collaborative effort to manage and fund a countywide open space master plan is needed to adequately protect available open space areas.

Goals and Policies for Open Space Resources

Goal C/NR 1: Open space areas that meet the diverse needs of Los Angeles County.	
Topic	**Policy**
Open Space Preservation and Conservation of Natural Areas	Policy C/NR 1.1: Implement programs and policies that enforce the responsible stewardship and preservation of dedicated open space areas.
	Policy C/NR 1.2: Protect and conserve natural resources, natural areas, and open spaces on park properties.
Open Space Acquisition	Policy C/NR 1.3: Support the acquisition of new available open space areas. Augment this strategy by leveraging County resources in concert with the compatible open space stewardship actions of other agencies, as feasible and appropriate.
	Policy C/NR 1.4: Create an established network of dedicated open space areas that provide regional connectivity, between the southwestern extent of the Tehachapi Mountains to the Santa Monica Mountains, and from the southwestern extent of the Mojave Desert to Puente Hills and Chino Hills.
	Policy C/NR 1.5: Increase and improve access to dedicated open space and natural areas for all users.
	Policy C/NR 1.6: Prioritize open space acquisitions for available lands that contain unique ecological features, streams, watersheds, woodlands, grasslands, and/or offer linkages that enhance wildlife movements and genetic diversity.
Goal C/NR 2: Effective collaboration in open space resource preservation.	
Topic	**Policy**
Open Space Collaboration and Financing	Policy C/NR 2.1: Establish new revenue generating mechanisms to leverage County resources to enhance and acquire available open space and natural areas.
	Policy C/NR 2.2: Encourage the development of multi-benefit dedicated open spaces.
	Policy C/NR 2.3: Improve understanding and appreciation for natural areas through preservation programs and educational facilities.
	Policy C/NR 2.4: Collaborate with public, non-profit, and private organizations to acquire and preserve available open space lands.

III. Biological Resources

The physical environment of the unincorporated areas is extremely diverse: elevations range from sea level to 10,000 feet; soils vary due to prehistoric volcanic activity, marine sedimentation and river deposition; and climates that are mild and moist near the coast change to severe temperature extremes in the high mountains and desert. The unincorporated areas boast a treasury of natural features, including coastlines, islands, dunes, marshes, tidal flats, sea cliffs, hills, mountain ranges, freshwater ponds, rivers, streams, wetlands, woodlands, deserts, chaparral, grasslands, valleys, and plains. As a result, the unincorporated areas contain a unique and varied collection of biological resources, including habitats and species—some of which may not be found anywhere else in the world. For example, Los Angeles County is part of the California Floristic Province, which has been designated by Conservation International as one of the world's top 25 hotspots of biodiversity loss—the only one in the United States.

The unincorporated areas have six main types of biological resources: regional habitat linkages; forests; coastal zone; riparian habitats, streambeds and wetlands; woodlands; and Significant Ecological Areas (SEAs). The General Plan works to protect and enhance these resources, and ensure that the legacy of the unique biotic diversity is passed on to future generations.

In addition, there are two sites in the unincorporated areas that are controlled by the U.S. Department of Defense and that contain important biological resources. The resources and protections on Edwards Air Force Base in the Antelope Valley are described in detail in the Antelope Valley SEA description in Appendix E. The resources and protections on San Clemente Island are described in detail in the Coastal Zone Resources section in Appendix E.

Background

Regional Habitat Linkages

Biological resources and important habitat areas in the unincorporated areas are part of a greater habitat linkage that extends beyond Los Angeles County boundaries. Figure 9.2 maps the regional habitat linkages that connect biological resource areas in Los Angeles County with resource areas in adjacent local jurisdictions. The areas depicted are based on national forest boundaries, the County's SEAs, and a series of missing linkage design studies conducted by the South Coast Wildlands Project. For a detailed description of these linkages, please refer to Appendix E. The following linkages are important to ensure greater regional biodiversity, and species and habitat connectivity:

- The Puente Hills SEA is a linkage connecting the Puente Hills with the Chino Hills in Orange County.
- Linkages in the Santa Monica Mountains, Santa Susana and Simi Hills, Santa Clara River and Santa Felicia Creek SEAs connect to habitats in Ventura County.
- The San Andreas SEA is a linkage to the Santa Clara River Watershed, San Gabriel Mountains, Antelope Valley, and Tehachapi Mountains.
- The Antelope Valley SEA serves as a linkage between the San Gabriel Mountains and the Mojave Desert, and provides wildlife movement opportunities into open areas in Kern County and San Bernardino County.

Figure 9.2: Regional Habitat Linkages Map

Forests

The two national forests, Los Padres National Forest and Angeles National Forest, contain extensive biological resources. The Angeles National Forest contains the largest area of dedicated open space in Los Angeles County. A vast number of wildlife species depend on the Angeles National Forest for protection, foraging, and breeding. Two thirds of the Angeles National Forest has slopes steeper than 60 percent, with elevations ranging from 1,200 to 10,000 feet above sea level.

Activities that occur in the national forests have a potential impact on biotic resources, as well as on the quality of local water supplies and the health of major watersheds. There are 240 miles of perennial rivers and streams, as well as 19 lakes and reservoirs. The floor of the national forests allows rainfall and snowmelt to replenish groundwater basins, which provides the unincorporated areas with approximately 13 percent of its annual water supply. Surface water runoff fills streams and rivers, which support riparian habitats and which, in the case of the Angeles National Forest, flow downstream into the channelized waterways of the Los Angeles River and its tributaries before reaching the Pacific Ocean. To protect these forest functions, the U.S. Forest Service has identified two thirds of the national forests in Los Angeles County as sensitive watershed areas.

The County is responsible for the land use regulation of the nearly 40,000 acres of privately-owned in-holdings within the national forest boundaries. Much of this land is in remote locations, subject to a high degree of natural hazards, and lacks adequate access to paved roads and water supply. The County does not encourage development in the national forests, and regulation is coordinated closely with the U.S. Forest Service.

Coastal Zone

The biological resource value in the coastal zone, which includes San Clemente Island, Santa Catalina Island, Marina Del Rey, Ballona Wetlands and the Santa Monica Mountains, is significant. The study and management of these resource areas is more rigorous than any other area in Los Angeles County, and any land disturbance is regulated through coastal land use plans and local coastal programs, in conjunction with the California Coastal Commission.

Biological resources in the coastal zone are identified through Sensitive Environmental Resource Areas (SERAs), which contain terrestrial or marine resources that, because of their characteristics and/or vulnerability, require special protection. SERAs are comprised of the following sub-categories: Environmentally Sensitive Habitat Areas (ESHAs); Significant Woodlands and Savannahs; Significant Watersheds; Malibu Cold Creek Resource Management Area; and Wildlife Migration Corridor. SERAs are not intended to function as isolated preservation areas, but as areas subject to strictly-enforced environmental resource protections and land use regulations.

Biological resource management and regulation on Santa Catalina Island is implemented through the Santa Catalina Island Local Coastal Program (LCP). Island resources, such as Significant Ecological Areas (SEA), are identified in the LCP and are subject to restrictive development regulations. Any changes to the SEA boundaries or associated regulations require an amendment to the LCP and certification by the California Coastal Commission. Biological resource management and regulation on Marina Del Rey is also implemented through an LCP.

Land use regulation and jurisdictional authority in the Santa Monica Mountains Coastal Zone involves many public entities. In the unincorporated areas, biological resource protection is

implemented through the Malibu Land Use Plan and the Malibu Coastal Program District, and by both the County and the California Coastal Commission.

Finally, resources within San Clemente Island and the Ballona Wetlands are managed by the U.S. Navy and California Department of Parks and Recreation, respectively.

For more information on the biological resources in the coastal zone, please refer to Appendix E.

Riparian Habitats, Streambeds and Wetlands

Riparian habitats are comprised of vegetation and other physical features that are typically found on stream banks and flood plains associated with streams, lakes, or other bodies of perennial or nearly-perennial surface water. Streambeds are the physical confines that water typically flows through, either perennially or after rain events. Riparian habitats and streambeds are of inherent value to local and regional ecosystems. They serve as important connectors to up- and downstream ecosystems or adjacent habitats; provide critical value to migratory birds; contribute to the quality of habitat linkages and wildlife corridors; and play a crucial role in maintaining surface and subsurface water quality.

Wetlands are areas that are inundated or saturated by surface water or groundwater at a frequency and duration that are sufficient to support vegetation, which is typically adapted for life in saturated soil conditions. Examples of wetlands include swamps, marshes, bogs, vernal pools, and playa lake areas. However, wetlands can also remain dry for long periods of time (e.g., arroyos or ephemeral streams, characteristic of the American Southwest), which makes their identification and management potentially difficult. Wetlands contribute to water quality and the overall health of watersheds in several ways. They slow water flow, decrease erosion, filter water runoff, and provide habitat for many endangered plant and animal species.

The Emergency Wetlands Resources Act establishes a national wetlands conservation program, which requires states to include wetlands in their Comprehensive Outdoor Recreation Plans for management and preservation. California has lost over 90 percent of its original wetland areas, and Los Angeles County has lost 95 percent. The County is dedicated to preserving its remaining wetlands and supports the wetland reclamation and conservation efforts of other public agencies and numerous non-profit organizations. In addition to County policy and regulation, projects that are subject to CEQA and located in a wetland are forwarded to applicable state and federal agencies for further review and permitting requirements.

Woodlands

The County's oak woodlands are an important resource that provides an abundance of aesthetic, ecological, and economic benefits to residents. Oak woodland habitats are the most diverse terrestrial ecosystems in California. Similarly, riparian woodlands, California walnut, juniper, and Joshua tree woodlands provide habitat for multiple species within a concentrated area. Various types of woodlands are found in the unincorporated areas, including riparian woodlands; California walnut woodlands in the San Gabriel Valley and Puente Hills; juniper and Joshua tree woodlands in the Antelope Valley; and oak woodlands countywide.

Significant Ecological Areas (SEAs)

A Significant Ecological Area (SEA) designation is given to land that contains irreplaceable biological resources, as detailed in Appendix E. Cumulatively, the 21 SEAs and nine Coastal Resource Areas (CRAs) represent the wide-ranging biodiversity of Los Angeles County, and contain its most

important biological resources. Each individual SEA is sized to support sustainable populations of its component species, and includes undisturbed or lightly disturbed habitat along with linkages and corridors that promote species movement. Table 9.2 details the 21 SEAs and nine Coastal Resources Areas of the County. Note that two Coastal Resource Areas, the Santa Monica Mountains Coastal Zone and Palos Verde Coastline, are linked to SEAs that are not entirely within Coastal Resource Areas.

Table 9.2: Significant Ecological Areas and Coastal Resource Areas

Significant Ecological Areas	Coastal Resource Areas
• Cruzan Mesa Vernal Pools • East San Gabriel Valley • Griffith Park • Harbor Lake Regional Park • Joshua Tree Woodlands • Madrona Marsh Preserve • Palos Verdes Peninsula and Coastline • Puente Hills • Rio Hondo College Wildlife Sanctuary • San Andreas • San Dimas Canyon and San Antonio Wash • San Gabriel Canyon • Santa Clara River • Santa Felicia • Santa Monica Mountains • Santa Susana Mountains and Simi Hills • Tujunga Valley and Hansen Dam • Valley Oaks Savannah • Verdugo Mountains	• El Segundo Dunes • Malibu Coastline • Palos Verdes Coastline (ocean and shoreline portions) • Point Dume • Santa Catalina Island • Coastal Zone of the Santa Monica Mountains • Terminal Island (Pier 400)

Figure 9.3 Significant Ecological Areas and Coastal Resource Areas Policy Map

SEAs are part of the County's Special Management Areas Policy Map (Figure 6.1) in the Land Use Element. The County's SEA Program has a long history going back to the 1970s. The SEA Program,

for those SEAs located in unincorporated areas, is administered through the General Plan goals, policies and implementation program and the SEA CUP Ordinance. Some SEAs are located entirely or partially outside of the County's jurisdiction in cities, along the coastline, or within national forest land. Appendix E provides more information on the history of the SEA Program, guiding principles, criteria for designation, and detailed summaries of the biological resources contained within each SEA. The nine CRAs are included in the Significant Ecological Areas map. CRAs are located within the coastal zone and include biological resources equal in significance to SEAs. Protection of these areas must defer ultimately to the authority of the California Coastal Commission. Of particular note for the CRAs, the coastal zone of the Santa Monica Mountains and the entirety of Santa Catalina Island are regulated through their individual local coastal programs, not through the SEA Ordinance.

The objective of the SEA Program is to conserve genetic and physical diversity by designating biological resource areas that are capable of sustaining themselves into the future. However, SEAs are not wilderness preserves. Much of the land in SEAs is privately held, used for public recreation, or abuts developed areas. The SEA Program must therefore balance the overall objective of resource preservation against other critical public needs. The General Plan goals and policies are intended to ensure that privately-held lands within the SEAs retain the right of reasonable use, while avoiding activities and developments that are incompatible with the long-term survival of the SEAs.

Certain uses of the SEAs are compatible by definition with the long-term sustainability of biological resources. Some examples of uses that do not conflict with the goals of the SEA Program include: regulated scientific study; passive recreation, including wildlife observation and photography; and limited picnicking, riding, hiking and overnight camping. Many other uses may also be compatible with the SEA Program, or may partially or fully mitigate against potential impacts through careful site design and stewardship. In particular, the following uses may be determined compatible by scientific review or biotic surveys, or through the addition of conditions that are intended to protect against site specific and cumulative impacts to biotic resources in the SEA:

- Low-density or clustered residential uses that are compatible with identified biotic resources present in or affected by the site.
- Low-intensity local or visitor-serving commercial uses.
- Essential public and semi-public uses that are necessary for health, safety and welfare, and that cannot be relocated to alternative sites.
- Agricultural uses that are compatible with identified biotic resources that are present on or near the site.
- Extractive uses, including oil and gas recovery, and rock, sand and gravel quarrying, which are compatible with identified biotic resources.

More complex or intensive types of developments within SEAs are not precluded from development, but may require additional technical review to ensure that projects properly identify existing resources and potential impacts. The Los Angeles County Department of Regional Planning (DRP) assumes a responsibility to assist these types of projects with site design in the early stages of the project to ensure that projects are sensitive to and compatible with the resources of the area. The process of analyzing impacts to existing biological resources and determining SEA compatibility is designed to provide careful evaluation of projects within SEAs, in order to ensure that the ecological function of the SEA is maintained.

Generally, complex or intensive types of developments in the SEAs require an SEA Conditional Use Permit (SEA CUP). The SEA Technical Advisory Committee (SEATAC) is an expert advisory committee that assists the DRP and the Los Angeles County Regional Planning Commission in assessing applications for SEA CUPs by providing recommendations on the biological analyses conducted for SEA CUPs, and on the project's compatibility with SEA resources.

Issues

1. Preservation of Biotic Diversity

Development continues to be the main cause of species decline in the Southern California region, where approximately 20 percent of the species on the federally-endangered species list are found. Although both federal and state agencies are tasked with protecting their listed species, the County has a role to play in species survival when it decides whether or not to approve development within habitats that contain endangered and threatened species. The SEA Program balances future development and human activities against the preservation of irreplaceable biotic resources. The SEA designation does not protect or identify every individual biotic resource, and SEAs are not preserves or conservation areas; rather, SEAs are areas in which planning decisions are made with extra sensitivity toward biological resources and ecosystem functions. In order to accommodate potential development pressures, the SEAs were designed as large-scale areas connected to regional resources, creating a sufficient habitat and mobility areas for species. However, the resiliency and long-term sustainability of the SEAs is dependent upon careful land use decisions by the County to maintain core habitats and linkages.

2. SEA Monitoring and Status Reporting

SEAs are large and changing areas containing evolving resources, and new science, species, or development practices may create a need for changes to the SEA Program over time. In order to meet the changing needs of the SEA Program, and assess progress in implementation, the County should periodically review the SEA Program. This periodic review may include undertaking new studies, monitoring approved uses, disclosing impacts of development and human activities on biological resources and, when necessary, amending the SEA Ordinance, SEA boundaries and technical descriptions to address any changes required to meet the overall objective of the SEA Program.

3. Coordination of Property Rights and Environmental Protection

The SEA Program is a method of balancing private property rights against impacts to irreplaceable biological resources. Preservation of these resources must not compromise the right of privately held lands to be fairly used by their owners, nor burden them with excessive development costs or regulatory procedures. The SEA Program is tasked with serving the needs of property owners in SEA areas by simplifying the development process when possible, providing clear guidelines and expectations about the requirements for development in SEAs, coordinating with other regulatory agencies, and seeking out financing mechanisms that incentivize the preservation of biological resources and the acquisition of conservation areas.

Goals and Policies for Biological Resources

Goal C/NR 3: Permanent, sustainable preservation of genetically and physically diverse biological resources and ecological systems including: habitat linkages, forests, coastal zone, riparian habitats, streambeds, wetlands, woodlands and SEAs.	
Topic	**Policy**
Protection of Biological Resources	Policy C/NR 3.1: Conserve and enhance the ecological function of diverse natural habitats and biological resources.
	Policy C/NR 3.2: Create and administer innovative County programs incentivizing the permanent dedication of SEAs and other important biological resources as open space areas.
	Policy C/NR 3.3: Restore significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function—acknowledging the importance of incrementally restoring ecosystem values when restoration is not feasible.
	Policy C/NR 3.4: Conserve and sustainably manage forests and woodlands.
	Policy C/NR 3.5: Ensure compatibility of development in the national forests in conjunction with the U.S. Forest Service Land and Resource Management Plan.
	Policy C/NR 3.6: Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.
	Policy C/NR 3.7: Participate in inter-jurisdictional collaborative strategies that protect biological resources.
Site Sensitive Design	Policy C/NR 3.8: Discourage development in areas with identified significant biological resources, such as SEAs.
	Policy C/NR 3.9: Consider the following in the design of a project that is located within an SEA, to the greatest extent feasible: • Preservation of biologically valuable habitats, species, wildlife corridors and linkages; • Protection of sensitive resources on the site within open space; • Protection of water sources from hydromodification to maintain the ecological function of riparian habitats; and • Placement of the development in the least biologically sensitive areas on the site. • Watershed sensitivity by capturing, treating, retaining, and/or infiltrating storm water flows on site.
	Policy C/NR 3.10: Require that development mitigate ‘in-kind’ for unavoidable impacts on biologically sensitive areas—onsite or nearby as feasible, but allow flexible off-site application to the benefit of other County SEAs or connectivity among them if onsite is not feasible, and permanently preserve mitigation sites.

	Policy C/NR 3.11: Discourage new development from increasing the urban-wildland interface in undisturbed natural areas through compact design.
	Policy C/NR 3.12: Discourage development to maintain and support the preservation of riparian habitats, streambeds, and wetlands in a natural state, unaltered by grading, fill, or diversion activities.
Goal C/NR 4: Preserved and restored oak woodlands that are conserved in perpetuity with no net loss of existing woodlands.	
Topic	**Policy**
Oak Woodland Preservation	Policy C/NR 4.1: Conserve and sustainably manage oak woodlands.

IV. Local Water Resources

The arid and semi-arid climate and landscape of Los Angeles County require that water be managed as an invaluable resource. The County recognizes that the effective management and preservation of its local water resources are vital to preserving a high quality of life for residents and businesses, as well as for sustaining the functioning of watersheds and the natural environment.

Background

Local Water

The occurrence and movement of water above, on, and below the ground can be explained in general terms by the hydrologic cycle. Precipitation falls to earth, is intercepted by vegetation before it reaches the ground, then soaks into the soil where it infiltrates into shallow and deeper groundwater zones. Water drawn up by vegetation transpires into the atmosphere in the form of water vapor. Similarly, water collected on surfaces and in the soil evaporates into the atmosphere. Collectively, this process of water vapor passing into the atmosphere is called evapotranspiration. During a storm, as the soil approaches saturation and rainfall continues, runoff begins to occur. Rainfall falling on paved surfaces does not soak into the ground. At first, the runoff gathers in small pools and minor depressions on the ground surface. Once these small depressions are filled and rainfall continues, runoff increases, forming rivulets and filling streams, rivers, and lakes. Precipitation, interception, infiltration, evapotranspiration, and runoff occur in the context of a system called a watershed.

Precipitation

During the wet season, storms approach from the west or northwest, with southerly winds that continue until the weather front passes. Nearly all precipitation occurs during the months of December through March, while precipitation during summer months is infrequent, and rainless periods of several months are common. The average annual rainfall across Los Angeles County is 15.65 inches, but the annual average varies from 7.8 inches in the high desert, to 12.1 inches at Los Angeles International Airport (LAX) near the coast, to 27.5 inches at Mt. Wilson. Another examination of characteristic rainfall patterns shows that 85% of all storms within Los Angeles County deposit between 3/4 inch and 11/4 inches or less of rain, depending on location.

Snowfall at elevations above 5,000 feet is frequently experienced during winter storms but, except on higher peaks and the northern slopes, melts rapidly. In the coastal plain and mountainous areas, the distribution of rainfall from individual storms generally follows patterns related to elevation and terrain. This distribution is called the orographic effect.

Runoff and Surface Waters

The Pacific Ocean eventually receives the excess runoff that is generated on the coastal plain of Los Angeles. Excess runoff generated in the Antelope Valley of the high desert will eventually arrive at the dry lake bed near the border with Kern County. The high desert can also experience summer thunderstorms, which cause the most serious flooding in that area. Surface flows reach the dry lake bed when the storms in the high desert are large enough for runoff to exceed local infiltration and transpiration.

Runoff can even occur at times of no rain. In urban areas, dry weather runoff can occur as the result of the discharge of process flows and other human endeavors. Examples of process flows include treated wastewater and industrial flows. Excessive irrigation can also contribute to dry weather

runoff. Dry weather discharge from natural springs and seeps can occur in mountainous areas and where high groundwater levels otherwise reach the ground surface. The amount and continuity of springs and seep flows can vary year to year, depending significantly on previous rainfall.

Surface waters occur in the form of streams, rivers, ponds, lakes, and reservoirs. In Los Angeles County, there are over 900 miles of major river systems, 3600 miles of smaller streams, and 25 square miles of pond, lake, and reservoir surface. Streams and rivers convey surface runoff and can be instrumental in groundwater recharge. They can also serve as corridors for fish and wildlife movement. Streams and rivers support their own habitats as well as link other habitats together.

A number of the ponds, lakes and reservoirs in Los Angeles County are human-made impoundments that serve as water storage facilities. These storage facilities receive and store rainfall and runoff, as well as imported water supplies from outside of Los Angeles County, and hold them until needed at a later time. Examples within Los Angeles County boundaries are Hollywood Reservoir, which is operated by the City of Los Angeles Department of Water and Power, and Pyramid Lake, operated by the Metropolitan Water District of Southern California. Smaller impoundments are operated by other public and private water wholesalers and retailers. Some of these facilities support fish and wildlife, and provide recreation areas for residents that are compatible with flood management and water storage operations.

Some impoundments, which are primarily operated by the Los Angeles County Flood Control District, serve the dual functions of flood control and storage. Stored runoff collected during the storm season is later released at controlled rates throughout the year for downstream groundwater recharge. For example, an array of Los Angeles County Flood Control District dams in the San Gabriel Mountains provides flood protection, while storing runoff for later release to the San Gabriel River and downstream groundwater recharge areas. These downstream facilities capture close to 80 percent of the runoff that flows from the mountains. Water sources that originate in Los Angeles County provide approximately one third of the area's water supply.

The rate and quantity, as well as the quality, of runoff are significantly influenced by the land use within the tributary area. For example, the amount of impervious surface that accompanies development, in particular, connected impervious surfaces, dictates the volume of runoff produced from most storms. Furthermore, the degree to which flow paths are straightened, channelized, piped, and connected influence how soon runoff appears during a storm and the rate at which it flows. The types of land uses, ranging from open space, single family, and heavy industrial, affect the type and concentration of pollutants that may be carried in the runoff.

For flood protection and erosion control purposes, many of the larger rivers within Los Angeles County are armored with concrete lining. Some rivers, such as the Ballona Creek and Los Angeles River, are mostly lined on the bottoms as well as along the banks. Others, such as the San Gabriel River and Santa Clara River, are armored primarily along their banks.

Also located within Los Angeles County are a number of regional groundwater recharge areas called spreading grounds. Most spreading grounds are owned by the Los Angeles County Flood Control District and are located in areas where the underlying soils are composed of permeable formations and are hydraulically connected to the underlying groundwater basin. Some spreading grounds are owned by the City of Los Angeles and by a few other cities. The total area of regional spreading grounds countywide is 3,361 acres.

Soils, Infiltration, and Groundwater

Soil type and geography will influence the location and amount of rainwater and surface water infiltration. Igneous, metamorphic, and sedimentary rock groups are present within Los Angeles County. The San Gabriel Mountains and Verdugo Hills are composed primarily of highly fractured igneous rock, with large areas of granitic rock formation being exposed. Faulting and deep weathering have produced porous zones in the rock formation; however, rock masses have produced a comparatively shallow soil mantle due to the steepness of slopes, which is a condition that accelerates erosion of the finer material.

Surface soils that are deposited by the movement of water are termed alluvial soils. Valley and desert soils are alluvial and vary from coarse sand and gravel near canyon mouths to silty clay, clay, and sand, and gravel in the lower valleys and coastal plain. The alluvial fill has accumulated by repeated deposition of sediments to depths as great as several thousand feet. This fill is quite porous in areas of relatively low clay content. Geologic structures and irregularities in the underlying bedrock divide the alluvium into several groundwater basins. Valley soils are generally well drained, but there are a few areas containing perched water where groundwater sits above the main aquifer separated by a relatively impermeable layer. Soils are further described in the Agricultural Resources section.

When precipitation and surface water infiltrate naturally into the ground, they first typically travel through an unsaturated soil zone until they reach the water table, which is the layer where the soil is saturated. This layer of soil saturation is called a groundwater basin, or aquifer. Aquifers can hold millions of acre-feet of water and extend for miles. There are numerous major groundwater basins, located geographically as shown in Table 9.3.

Table 9.3: Major Groundwater Basins

	Major Groundwater Basin
Coastal Plain	• Central Basin • West Coast Basin • Santa Monica Basin • Hollywood Basin
San Gabriel Valley	• Main San Gabriel Basin • Upper San Gabriel Canyon Basin • Lower San Gabriel Canyon Basin • Wayhill Basin • Foothill Basin • Glendora Basin • Claremont Heights Basin • Live Oak Basin • Chino Basin • San Dimas Basin • Pomona Basin • Puente and Spadra Basins • Raymond Basin
San Fernando Valley (also known as the Upper Los Angeles River Area)	• San Fernando Main Basin • Sylmar Basin • Verdugo Basin • Eagle Rock Basin
Santa Clarita Valley	N/A
Antelope Valley	N/A

Except during times of drought, groundwater extraction accounts for nearly 1/3 of the water usage in the unincorporated areas. In rural areas, hundreds of households depend solely on private wells that tap into local groundwater sources.

Watersheds

A watershed is a geographic area that, due to its terrain and topography, contributes to the flow of surface water, sediments, and transported materials from the land into a common river, lake, groundwater basin, ocean, or other water body. A watershed, also known as a drainage area or catchment, can be large or small, pristine or urbanized. All land is located in a watershed of some sort. Furthermore, just as larger river systems can have smaller tributary streams, a major watershed can also have smaller sub-watersheds within it that define the tributary drainage areas. An action that occurs within an upstream watershed, therefore, can have an impact on downstream conditions.

A healthy watershed is a place where the interrelated functions of the water cycle—water movement, soil movement, and vegetative cover—unite to simultaneously provide the benefits of water supply, clean runoff, healthy microclimate, flood protection, recreation, and habitat.

The following are major watersheds in Los Angeles County, as shown in Table 9.4 and Figure 9.4. For descriptions of these major watersheds, please refer to Appendix E.

Table 9.4: Major Watersheds

Watershed	Sub-Watershed
Antelope Valley Watershed	• Amargosa Creek Big Rock Creek • Little Rock Creek
Los Angeles Harbor Watershed	• Dominguez Channel
Los Angeles River Watershed	• Tujunga Wash • Verdugo Wash • Arroyo Seco • Rio Hondo • Compton Creek
San Gabriel River Watershed	• Walnut Creek • Puente Creek • Coyote Creek
Santa Clara River Watershed	• Soledad Canyon

	• Mint Canyon • Bouquet Creek • South Fork Santa Clara River
Santa Monica Bay Watershed	• Malibu Creek • Topanga Canyon • Santa Monica Canyon • Ballona Creek

Watershed Management

Watershed management is an effective and comprehensive method to address water resource challenges. Watershed management integrates habitat enrichment and recreation availability with water supply, flood protection, and clean runoff.

Because a watershed encompasses many jurisdictions, water supply, water quality, flood protection and natural resource issues are best managed at a regional or multiple-agency level. The County works within its jurisdiction to improve the health of rivers, streams and lesser tributaries to enhance overall water resources, runoff quality and wildlife habitat. However, watershed integration must be a multi-jurisdictional process. The County has to participate with other stakeholders, including the Los Angeles County Flood Control District, in various ways to manage the function and health of watersheds.

The collaborative process is the most effective way to engage local stakeholders and local jurisdictions, generate partnerships, collaborate with educational and professional institutions, and develop and implement watershed plans. Such plans should incorporate measures to protect and augment local water supplies, maintain flood protection standards, provide assistance in the event of flooding, encourage recreational opportunities, conserve habitats of native species, and improve the quality of water that flows to rivers, lakes, and the ocean.

Figure 9.4: Major Watersheds Map

Surface Water Quality Regulations

The federal government established the Clean Water Act (CWA) in 1972 to “restore and maintain the chemical, physical, and biological integrity of the Nation’s waters” with the goal that “wherever attainable water quality should provide for the protection and propagation of fish, shellfish, and wildlife, and provide for recreation in and on the water.” Under delegated authority from the United State Environmental Protection Agency (EPA), the California Water Resources Control Board (State Water Board) and the nine Regional Water Quality Control Board (Regional Boards) are responsible for implementing portions of the CWA in California, including the development of water quality standards and the implementation of regulatory programs such as the National Discharge Elimination System (NPDES). In 1949, nine California Regional Boards were established to protect the quality of receiving waters from adverse impacts of wastewater discharges. In 1969, the enactment of the Porter-Cologne Water Quality Act (California Water Code) authorized the State

Water Board to adopt, review, and revise policies for all waterbodies in California. The Act also directed Regional Boards to develop regional Water Quality Control Plans (Basin Plans) that would help protect or restore the beneficial uses of inland waterbodies.

In 1972, the State Water Board adopted the California Ocean Plan for ocean waters of California. Over the years, the Ocean Plan has been amended numerous times, with the most recent amendment in 2012. The Ocean Plan helps to protect the water quality of California's coastal ocean through the control of the discharge of waste into the ocean. The Ocean Plan identifies beneficial uses of ocean waters and establishes water quality objectives and implementation programs to protect those beneficial uses. The beneficial uses to be protected under the Ocean Plan include "industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Areas of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting."

In 1975, the Los Angeles Regional Board adopted two basin plans: one for the Santa Clara Basin and another for the Los Angeles Basin. In 1994, the Los Angeles Regional Board adopted a comprehensive Basin Plan applicable the Los Angeles Region (encompassing Ventura and Los Angeles counties, excluding the Antelope Valley). The Antelope Valley area of Los Angeles County is under the jurisdiction of the Lahontan Regional Board. The Lahontan Basin Plan took effect in 1995, replacing three earlier plans. Since the 1990's, the Basin Plans have been amended numerous times. The Basin Plan designates beneficial uses for inland and coastal surface waters, establishes water quality objectives and implementation programs and policies to protect those uses. There are up to 24 beneficial uses identified and defined in the Basin. Examples of beneficial uses in the Basin Plan include: municipal and domestic supply; water contact recreation; and preservation of biological habitats. A complete list of the beneficial uses can be found in the basin plans of the Los Angeles and Lahontan regions.

National Pollutant Discharge Elimination System (NPDES)

In 1987, an amendment to the Clean Water Act effectively prohibited the discharge of pollutants to waters of the U.S. from stormwater, unless such discharge is in compliance with a National Pollutant Discharge Elimination System (NPDES) Permit. The NPDES is a permitting program that establishes a framework for regulating municipal, industrial, and construction stormwater discharges into surface water bodies, including stormwater channels. The Los Angeles Regional Water Quality Control Board (Los Angeles Regional Board) and Lahontan Regional Water Quality Control Board are responsible for implementing the federally-mandated NPDES program in Los Angeles County through the adoption of Orders, which are effectively the NPDES Permits for that region. An NPDES Permit defines the responsibilities of each permittee to control pollutants, including the adoption and enforcement of local ordinances and monitoring programs. Consequently, the County has a Stormwater Ordinance that requires that the discharge, deposit, or disposal of any stormwater and/or runoff to storm drains must be covered by an NPDES Stormwater Permit. For more information on the regional boards' NPDES programs, please visit the State of California Environmental Protection Agency web site at http://www.swrcb.ca.gov/rwqcb4 and http://www.swrcb.ca.gov/rwqcb6.

As part of its NPDES Program, the Los Angeles Regional Board adopted a new Municipal Separate Storm Sewer Permit (MS4 Permit) in 2012 (MS4 Permits are also sometimes referred to as Stormwater Permits). The remainder of this section discusses the MS4 permit and some of the County's associated efforts.

The Los Angeles Regional Board's 2012 MS4 Permit named 84 incorporated cities, the County, and the Los Angeles County Flood Control District as permittees. The MS4 Permit imposes a number of basic programs, call Minimum Control Measures, on all permittees in order to maintain a level of acceptable runoff conditions through the implementation of practices, devices, or designs generally referred to as Best Management Practices (BMPs), that mitigate stormwater quality problems. The programs required by the MS4 Permit are: public information and participation; industrial/commercial inspection; planning and land development; development construction; public agency activities; and illicit connection/discharge abatement. For example, the planning and land development program requires the inclusion of post-construction stormwater BMPs into the design of most new public and private development at the project site level to address pollutants generated by specific activities and types of development. The development construction program requires the implementation of temporary BMPs during a project's construction phase. These construction phase BMPs protect water resources by preventing erosion, controlling runoff, protecting natural slopes and channels, storing fluids safely, managing spills quickly, and conserving natural areas. In the public agency activities program, the County and other permittees are directed to implement "good housekeeping" BMPs to eliminate runoff problems that might be associated with an agency's routine activities. These BMPs include material storage management, vehicle washing management, spill containment, and public parking lot sweeping.

The Los Angeles Regional Board's 2012 MS4 Permit offers an integrated-planning approach, called a Watershed Management Program (WMP), in which permittees can collaborate to address water quality priorities on a watershed scale. The WMP allows permittees to customize BMPs and develop multi-benefit projects that contain water quality improvement, flood control, water conservation, and/or beautification components.

As a result of the Los Angeles Regional Board's MS4 Permit, in November 2013, the County's Low Impact Development (LID) and Hydromodification Ordinance was amended. More information on the County's LID requirements can be found at http://dpw.lacounty.gov/wmd/LA_County_LID_Manual.pdf.

Areas of Special Biological Significance (ASBSs)

Ocean areas requiring the protection of marine species or biological communities from an undesirable alteration in natural water quality are designated by the California Water Resources Control Board as Areas of Special Biological Significance (ASBSs). There are 34 areas designated as ASBS. Of those, six are located within the jurisdiction of the County. Five ASBSs are located off the coasts of the Channel Islands (one along the coastline of the San Clemente Island and four along the coastlines of Santa Catalina Island). The sixth ASBS (designated as "ASBS-24") is located along the coast of Ventura County and Los Angeles County, extending from Laguna Point to Latigo Point. About two-thirds of ASBS-24 lies along the coastline of Los Angeles County.

Federal and state policies prohibit the discharge of pollutants into areas identified as ASBS. Specifically, the Ocean Plan requires that "waste shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas." The County, the Los Angeles County Flood Control District, cities and other public jurisdictions, and private property owners own and maintain dozens of storm drains that discharge into ASBS-24.

Issues

1. Watershed Impacts

All development and urban activities occur in a watershed. Rivers, streams, and people can be adversely affected by poorly designed land uses within a watershed. With urbanization comes impervious surfaces, the straightening and channelizing of water courses, the filling of wetlands, intrusion into flood plains, the loss of vegetation, heat island effects, compacted soils, increased and polluted runoff, eroded streams, and the impairment of surface and groundwaters. The General Plan recognizes the importance of utilizing a watershed-based planning approach as a method to protect, conserve and restore resources by utilizing or mimicking natural hydrologic processes. The path to improving local water resources is through improving watershed functions.

2. Surface Water Impairments

The EPA has found that close to 218 million Americans live within 10 miles of a polluted lake, stream, river, or coastline, and most of Los Angeles County falls within this category. The cost of cleaning polluted water bodies is significant and requires additional funding for local agencies to implement. Water quality regulation and implementation programs are beginning to make a difference, but without major public awareness, behavioral changes, and operational changes, the clean-up process will remain an ongoing challenge.

Federal and state agencies, such as EPA and Regional Boards, are working to improve the quality of surface and groundwater by identifying contaminants, imposing clean-up efforts, and bringing enforcement actions against polluters. In order to comply with surface water quality regulations to protect existing clean water bodies and restore impaired water bodies, the County and all cities are implementing water pollution prevention programs appropriate for their jurisdiction.

Section 303(d) of the CWA requires states to identify and establish a list of water bodies that do not meet applicable water quality standards. Those water bodies are considered “impaired” and are placed on the CWA Section 303(d) list. A significant number of the water bodies in Los Angeles County, including rivers, lakes, coastal estuaries, bays, and beaches, are included on the 303(d) list. More than a dozen different stormwater and wastewater pollutants including metals, nutrients, indicator bacteria, organics, pesticides, trash, and other contaminants are found in water bodies in Los Angeles County in amounts significantly above established water quality standards.

For each impaired water body, states are required to develop a total maximum daily load (TMDL). A TMDL is a tool by which water quality standards are implemented to restore impaired water bodies. It establishes the allowable pollutant loading that a water body can receive and still attain water quality standards. Any pollution above the TMDL has to be “budgeted,” meaning that the residual pollution is allocated for reduction among the various sources of the pollutant in order to regain the beneficial uses of the water body. As of 2013, there are 34 TMDLs developed for water bodies in Los Angeles County. All of these TMDLs are being implemented through the NPDES Permit. More TMDLs are expected in the future for the remaining pollutants in the 303(d) list.

3. Groundwater Impairment and Depletion

In the more urbanized coastal basin of Los Angeles County, the natural recharge process is hampered by compacted soils and impervious surfaces associated with urbanization and development. In the open space areas of the northern portion of Los Angeles County, where substantial percolation can occur, water demand is so great that annual precipitation and groundwater recharge operations are not sufficient enough to recharge the basins.

Because approximately one-third of the local water supply is drawn from groundwater basins, the quantity and quality of this water source is critical. Contamination from past industrial and agricultural practices, saltwater intrusion, and underground storage tank leakage has decreased usable groundwater supplies.

In an effort to mitigate groundwater depletion, water agencies have developed strategies to recharge groundwater artificially. One strategy involves purchasing water imported from outside Los Angeles County or utilizing recycled water (highly treated wastewater or reclaimed water) and recharging it back into the groundwater basins. Another strategy diverts imported water to certain regional spreading grounds, where it can percolate back into the water basins. The Los Angeles County Flood Control District also diverts a certain amount of stormwater into regional spreading grounds to replenish the groundwater supply.

Highly-treated, recycled waste water is also used for recharging groundwater aquifers through Los Angeles County Flood Control District spreading operations and injection at seawater barriers to resist saltwater intrusion. This recycled water is provided to a large degree by the Los Angeles County Sanitation Districts and to lesser degrees by the Water Replenishment District of Southern California, the City of Los Angeles, and the West Basin Municipal Water District.

In February 2009, the State Water Board adopted Resolution No. 2009-0011, which established a statewide Recycled Water Policy. This policy encourages increased use of recycled water and local stormwater and requires local water, stormwater, and wastewater agencies and other stakeholders to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin in California. The objectives are to facilitate basin-wide management of salts and nutrients from all sources in a manner that optimizes recycled water use while ensuring protection of groundwater supply. The SNMP will eventually be adopted by the Regional Board as a Basin Plan Amendment.

Goals and Policies for Local Water Resources

Goal C/NR 5: Protected and useable local surface water resources.	
Topic	**Policy**
Surface Water Protection	Policy C/NR 5.1: Support the LID philosophy, which seeks to plan and design public and private development with hydrologic sensitivity, including limits to straightening and channelizing natural flow paths, removal of vegetative cover, compaction of soils, and distribution of naturalistic BMPs at regional, neighborhood, and parcel-level scales.
	Policy C/NR 5.2: Require compliance by all County departments with adopted Municipal Separate Storm Sewer System (MS4), General Construction, and point source NPDES permits.
	Policy C/NR 5.3: Actively engage with stakeholders in the formulation and implementation of surface water preservation and restoration plans, including plans to improve impaired surface water bodies by retrofitting tributary watersheds with LID types of BMPs.
	Policy C/NR 5.4: Actively engage in implementing all approved Enhanced Watershed Management Programs/Watershed Management Programs and Coordinated Integrated Monitoring Programs/Integrated Monitoring Programs or other County-involved TMDL implementation and monitoring plans.
	Policy C/NR 5.5: Manage the placement and use of septic systems in order to protect nearby surface water bodies.
	Policy C/NR 5.6: Minimize point and non-point source water pollution.
	Policy C/NR 5.7: Actively support the design of new and retrofit of existing infrastructure to accommodate watershed protection goals, such as roadway, railway, bridge, and other—particularly—tributary street and greenway interface points with channelized waterways.
Goal C/NR 6: Protected and usable local groundwater resources.	
Topic	**Policy**
Groundwater Protection	Policy C/NR 6.1: Support the LID philosophy, which incorporates distributed, post-construction parcel-level stormwater infiltration as part of new development.
	Policy C/NR 6.2: Protect natural groundwater recharge areas and regional spreading grounds.
	Policy C/NR 6.3: Actively engage in stakeholder efforts to disperse rainwater and stormwater infiltration BMPs at regional, neighborhood, infrastructure, and parcel-level scales.
	Policy C/NR 6.4: Manage the placement and use of septic systems in order to protect high groundwater.
	Policy C/NR 6.5: Prevent stormwater infiltration where inappropriate and unsafe, such as in areas with high seasonal groundwater, on hazardous slopes, within 100 feet of drinking water wells, and in contaminated soils.

Goal C/NR 7: Protected and healthy watersheds.	
Topic	**Policy**
Watershed Protection	Policy C/NR 7.1: Support the LID philosophy, which mimics the natural hydrologic cycle using undeveloped conditions as a base, in public and private land use planning and development design.
	Policy C/NR 7.2: Support the preservation, restoration and strategic acquisition of open space to preserve natural streams, drainage paths, wetlands, and rivers, which are necessary for the healthy function of watersheds.
	Policy C/NR 7.3: Actively engage with stakeholders to incorporate the LID philosophy in the preparation and implementation of watershed and river master plans, ecosystem restoration projects, and other related natural resource conservation aims, and support the implementation of existing efforts, including Watershed Management Programs and Enhanced Watershed Management Programs.
	Policy C/NR 7.4: Promote the development of multi-use regional facilities for stormwater quality improvement, groundwater recharge, detention/attenuation, flood management, retaining non-stormwater runoff, and other compatible uses.

V. Agricultural Resources

Agricultural land is an important resource in California and in Los Angeles County. Much of the agricultural land in Los Angeles County has been developed. Therefore, agricultural land is viewed as a non-renewable resource that needs to be protected from conversion and encroachment of incompatible uses.

Background

According to the Los Angeles County Crop Report, Los Angeles County produced over $173 million in agriculture products in 2011. Table 9.5 summarizes the dollar value of the crops and farm products produced, where nursery products remain number one commodity.

Table 9.5: 2011 Value of Los Angeles County Agricultural Crops and Commodities

Commodity	2011 Value
Nursery Products	$96,635,150
Flowers and Foliage	$7,774,900
Fruits and Nuts Crops	$2,999,260
Vegetable Crops	$31,956,680
Field Crops	$22,575,260
Livestock Production	$8,978,030
Apiary	$2,167,600
Forest Products	$19,170
Total	**$173,106,050**

Source: 2011 Los Angeles County Crop and Livestock Report

The trend for agriculture in Los Angeles County is more farms on fewer acres of land. According to data from the U.S. Census of Agriculture, since 1997 the number of farms in Los Angeles County has increased; however, the total acreage of land used for farming activities has continually declined. The 2007 U.S. Census of Agriculture identified a total of 1,734 farms in Los Angeles County, which represents a 41 percent increase from the 1997 Census. Despite this increase, the Census shows a decrease in the total number of acres used for farming. In 2007, the total number of acres in Los Angeles County used for farming was 108,463, which is a 17 percent decrease from the 1997 Census. Similarly, data from the 2011 Los Angeles County Crop Report shows that between 2010 and 2011, Los Angeles County saw decreases in the acreage of fruit and nut crops, vegetable crops, and field crops by 32 percent, 12 percent, and 7 percent, respectively.

The U.S. Department of Agriculture (USDA) Natural Resources Conservation Service classifies soils into eight categories based on agricultural potential. This classification depends on factors, such as slope, organic matter, flooding potential, and erosion hazards. From this classification, prime soils (Class I and II soils) are identified for agricultural production. Based on this system, the California Department of Conservation Farmland Mapping and Monitoring Program identifies farmland that is ideally suited for agricultural use. The program does not affect local land use decisions, but is an identification tool that can be used for policy purposes by local governments.

Agricultural Resources Areas

Agricultural Resource Areas (ARAs) consist of farmland identified by the California Department of Conservation, including Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. In addition, the ARAs include lands that received permits from the Los Angeles County Agricultural Commissioner/Weights and Measures.

The ARAs exclude the following: Significant Ecological Areas; approved specific plans; approved large-scale renewable energy facilities; lands outside of the Santa Clarita Valley and Antelope Valley, where farming is concentrated; and lands that are designated Public and Semi-Public (P).

Figure 9.5, Agricultural Resource Areas Policy Map, identifies areas where the County promotes the preservation of agricultural land.

Figure 9.5: Agricultural Resource Areas Policy Map

Issues

1. Agricultural Land Use Compatibility

Increased population growth and accompanying development will result in the conversion of agricultural lands to non-agricultural uses. This is problematic in the northern portion of Los Angeles County, which contains most of the agricultural land and is also experiencing the most rapid population growth. As development in the unincorporated areas expands from urban centers into agricultural areas, conflicts between land uses may occur. Residents of new housing developments often voice concern over odors, dust, and pesticides from neighboring farms. It is important to regulate development adjacent to agricultural land to minimize these impacts.

2. Sustainable Agriculture

Certain agricultural practices have been identified as being major contributors to pollutants that impact air and water quality. It is important that agricultural production address air quality, water quality, water supply and other issues related to sustainability. Sustainable agricultural practices, such as organic farming, can help mitigate the potential impacts of agricultural production.

Goals and Policies for Agricultural Resources

Goal C/NR 8: Productive farmland that is protected for local food production, open space, public health, and the local economy.	
Topic	**Policy**
Agricultural Resources	Policy C/NR 8.1: Protect ARAs, and other land identified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance by the California Department of Conservation, from encroaching development and discourage incompatible adjacent land uses.
	Policy C/NR 8.2: Discourage land uses in ARAs, and other land identified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance by the California Department of Conservation, that are incompatible with agricultural activities.
	Policy C/NR 8.3: Encourage agricultural activities within ARAs.
Goal C/NR 9: Sustainable agricultural practices.	
Topic	**Policy**
Sustainable Agricultural Practices	Policy C/NR 9.1: Support agricultural practices that minimize and reduce soil loss, minimize pesticide use, and prevent water runoff from leaching pesticide and fertilizer into groundwater and affecting water, soil, and air quality.
	Policy C/NR 9.2: Support innovative agricultural practices that conserve resources and promote sustainability, such as drip irrigation, hydroponics, organic farming, and the use of compost.
	Policy C/NR 9.3: Support farmers markets, farm stands, and community-supported agriculture.
	Policy C/NR 9.4: Support countywide community garden and urban farming programs.

VI. Mineral and Energy Resources

The Mineral and Energy Resources section of the Conservation and Natural Resources Element addresses the use and management of valuable energy and mineral resources in the unincorporated areas, and the importance of sustaining and maintaining these resources for future users. The demand for resources is high, and projected growth in the region will continue to strain the mineral supply.

Background

Mineral Resources

Mineral Resource Zones (MRZ-2s)

Mineral resources are commercially-viable aggregate or mineral deposits, such as sand, gravel, and other construction aggregate. California is the largest consumer of sand and gravel in the country, but is also a major producer, generating approximately one billion dollars-worth of these mineral resources annually. The Los Angeles metropolitan area produces and consumes more construction aggregate than any other metropolitan area in the country. A continuous supply of aggregate materials for urban infrastructure is essential to the Southern California economy.

The County depends on the California Geological Survey to identify deposits of regionally-significant aggregate resources. These clusters or belts of mineral deposits are designated as Mineral Resource Zones (MRZ-2s). Four major MRZ-2s are identified in, or partially within the unincorporated areas and are shown in Table 9.7: Little Rock Creek Fan, Soledad Production Area, Sun Valley Production Area, and Irwindale Production Area. The Soledad and Little Rock Creek MRZ-2s contain significant deposits that are estimated to provide for future needs through the year 2046. However, the Sun Valley MRZ-2 is near depletion, and the Irwindale MRZ-2 is expected to approach depletion in 2017. The County's MRZ-2s are shown in Figure 9.6, the Natural Resource Areas Map.

Table 9.6: Geologic Inventory of Mineral Resources in Los Angeles County

Production Region	Aggregate Reserves as of 1999	Per Capita Consumption Rates	Estimated Depletion Year
Irwindale Production Area	250 Million Tons	4.0 Tons	2017
Little Rock Creek Fan	250 Million Tons	12.7 Tons	2046
Soledad Production Area	160 Million Tons	9.9 Tons	2046
Sun Valley Production Area	20 Million Tons	2.4 Tons	near depletion

Source: California State Mining and Geology Board, Aggregate Resources in the Los Angeles Metropolitan Area, 1999

Figure 9.6: Natural Resource Areas Map

Mineral Resource Zone Regulation and Conservation

The California Department of Conservation protects mineral resources to ensure adequate supplies for future production. The California Surface Mining and Reclamation Act of 1975 (SMARA) was adopted to encourage the production and conservation of mineral resources, prevent or minimize adverse effects to the environment, and protect public health and safety. An important component of SMARA requires that all surface mines be reclaimed to a productive second use upon the completion of mining (Public Resources Code, sub-sections 2712 (a),(b), and (c)).

In a joint regulatory effort, SMARA authorizes local governments to assist the State in issuing mining permits and monitoring site reclamation efforts. To manage mining resources, the County has incorporated mineral resource policies into the Conservation and Natural Resources Element. In addition to these policies, Title 22 of the County Code (Part 9 of Chapter 22.56) requires that applicants of surface mining projects submit a Reclamation Plan prior to receiving a permit to mine, which must describe how the excavated site will ultimately be reclaimed and transformed into another use.

Oil and Natural Gas

Mineral Resources also include areas that are appropriate for the drilling for and production of oil and natural gas. Oil production still occurs in many parts of the unincorporated areas, including the Baldwin Hills and the Santa Clarita Valley and is regulated by the California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR).The County may regulate zoning and land use to mitigate impacts from surface operations on surrounding communities. Adherence to the standards for the installation, operation, and abandonment of oil and gas production and storage facilities is important to protect public health and safety.

Energy Resources

Energy in California is produced from a variety of non-renewable and renewable natural resources, including oil, natural gas, and hydrologic, wind, and solar power. Although non-renewable energy resources (oil and natural gas) generate a majority of its energy, California has one of the most diverse portfolios of renewable energy resources in the country. Renewable energy is derived from resources that are regenerative and cannot be depleted, such as wind and solar power. For this reason, renewable energy sources are fundamentally different from fossil fuels, such as coal, oil, and natural gas, which are finite and also produce greenhouse gases and other pollutants. Aside from existing oil and natural gas deposits, California's topography and climate lend themselves to the production of energy from wind, solar, and tidal power. There are significant opportunities for the County to produce energy from renewable sources.

Figure 9.6, the Natural Resource Areas Map identifies potential energy resources. More information about solar energy can be found on the County's web site at http://lacounty.solarmap.org.

Issues

1. Development of Mineral Resources

Mineral Resources include existing surface mining activities and known deposits of commercially-viable minerals and aggregate resources, as well as areas suitable for the drilling for and production of energy resources, including crude oil and natural gas. Many issues arise from the incompatible development of land near Mineral Resources. Mineral resource extraction and production, and activities related to the drilling for and production of oil and gas, can often garner community

complaints due to perceived environmental threats and surface operations. The General Plan protects Mineral Resources, as well as the conservation and production of these resources, by encouraging compatible land uses in surrounding and adjacent areas.

2. Energy Conservation

Energy demand for transportation and non-transportation uses, including gasoline, electricity, heating, and cooling will continue to increase as Los Angeles County grows. Energy consumption patterns demonstrate that residents consume proportionally more energy for transportation than the rest of California. Low-density, automobile-dependent communities place high demands on declining energy resources. The Mobility Element promotes rail, bus, carpool, bicycle, and pedestrian modes of transportation as alternatives to the single-occupant automobile, and the Land Use Element promotes the efficient development and use of land to reduce consumptive land use patterns.

In addition, state and county building codes determine energy efficiency requirements for building construction. Changes to building codes over the years have resulted in substantial improvements in energy efficiency. This has translated into less energy required to light, cool, and heat buildings. In addition, green building techniques, such as the use of passive solar orientation, recycled building materials, improved insulation, energy star appliances, and onsite small-scale renewable energy generation have contributed to energy conservation. The Air Quality Element includes policies on energy conservation and promoting renewable energy to help the County meet its climate change goals.

Goals and Policies for Mineral and Energy Resources

Goal C/NR 10: Locally available mineral resources to meet the needs of construction, transportation, and industry.	
Topic	**Policy**
Mineral Resource Zone Protection	Policy C/NR 10.1: Protect MRZ-2s and access to MRZ-2s from development and discourage incompatible adjacent land uses.
Goal C/NR11: Mineral extraction and production activities that are conducted in a manner that minimizes impacts to the environment.	
Topic	**Policy**
Mineral Extraction	Policy C/NR 11.1: Require mineral resource extraction and production activities and drilling for and production of oil and natural gas to comply with County regulations and state requirements, such as SMARA, and DOGGR regulations.
	Policy C/NR 11.2: Require the reclamation of abandoned surface mines to productive second uses.
	Policy C/NR 11.3: Require appropriate levels of remediation for all publicly-owned oil and natural gas production sites based on possible future uses.
	Policy C/NR 11.4: Require that mineral resource extraction and production operations as well as activities related to the drilling for and production of oil and natural gas be conducted to protect other natural resources and prevent excessive grading in hillside areas.
Goal C/NR 12: Sustainable management of renewable and non-renewable energy resources.	
Topic	**Policy**
Energy Resources	Policy C/NR 12.1: Expand the production and use of renewable energy resources.
	Policy C/NR 12.2: Encourage the effective management of energy resources, such as ensuring adequate reserves to meet peak demands.

VII. Scenic Resources

The County recognizes that the coastline, mountain vistas, and other scenic features of the region are a significant resource. This section of the Conservation and Natural Resources Element addresses the preservation of valuable designated scenic areas, vistas, and roadways.

Background

Scenic resources consist of designated scenic highways and corridors (or routes), and hillsides and ridgelines.

State Scenic Highways and Corridors

The State Scenic Highway Program was created in 1963 to protect and enhance the natural scenic beauty of California highways and adjacent corridors through special conservation treatment. The Los Angeles County Scenic Highway Plan was created to conform to the State Scenic Highway Program. According to state guidelines, a highway may be designated scenic depending upon how much of the natural landscape can be seen by travelers, the scenic quality of the landscape, and the extent to which development intrudes upon the traveler's enjoyment of the view.

To be designated as an official state scenic highway, the County must create a corridor protection program, which must be adopted by the Board of Supervisors. Each corridor protection program must contain the following five elements related to preserving the nominated scenic highway:

- Regulation of land use and density of development;
- Detailed land and site planning;
- Control of outdoor advertising;
- Careful attention to and control of earthmoving and landscaping; and
- Attention to design and appearance of structures and equipment.

For more information on nominations for official state scenic highway designations, please visit the California Department of Transportation Scenic Highway Program web site at http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm.

The County contains three state scenic highways, as seen in Table 9.7 and Figure 9.7.

Table 9.7: State Scenic Highways

Highway	Location
Angeles Crest Highway Route-2	From 2.7 miles north of I-210 to the San Bernardino County line.
Mulholland Highway (two sections)	From CA-1 to Kanan Dume Road From West of Cornell Rd. to East of Las Virgenes Road.
Malibu Canyon–Las Virgenes Highway	From CA-1 to Lost Hills Road

Figure 9.7: Scenic Highways Map

Hillsides, Scenic Viewsheds, and Ridgelines

Other scenic resources in the County include hillsides, scenic viewsheds, and ridgelines.

Hillsides

The San Gabriel Mountains, Verdugo Hills, Santa Susana Mountains, Simi Hills, Santa Monica Mountains and Puente Hills play a major role in physically defining the diverse communities in the unincorporated areas. They not only create dramatic backdrops against densely developed suburbs and communities, but also provide extensive environmental and public benefits to residents.

The vast majority of the native plant and animal species reside within the hilly and mountainous terrain. Mountain lions, bobcats, black bears and deer are among the larger animals that inhabit these areas, and serve as indicators that smaller mammals and vegetation within the food chain are stable. A high number of heritage oak trees that are 100 to 600 years old occur in many of the oak woodlands in the unincorporated areas, which further indicate the biological significance of these areas.

In addition to their scenic beauty, undeveloped mountains and hills serve to protect the overall health of watersheds. They provide natural drainage systems, which play a role in water quality, slope stability, stormwater runoff, erosion control and groundwater replenishment.

Scenic Viewsheds

A scenic viewshed provides a scenic vista from a given location, such as a highway, a park, a hiking trail, river/waterway, or even from a particular neighborhood. The boundaries of a viewshed are defined by the field of view to the nearest ridgeline. Scenic viewsheds vary by location and community and can include ridgelines, unique rock outcroppings, waterfalls, ocean views or various other unusual or scenic landforms.

Ridgelines

There are numerous ridgelines that provide dramatic views for the unincorporated areas. The General Plan supports the protection and preservation of ridgelines, and allows individual communities to identify and regulate their ridgeline resources. As indicated in C/NR Policy 13.10, the following criteria must be considered to identify significant ridgelines:

- Topographic complexity;
- Uniqueness of character and location;
- Presence of cultural or historical landmarks;
- Visual dominance on the skyline or viewshed, such as the height and elevation of a ridgeline; and
- Environmental significance to natural ecosystems, parks, and trail systems.

Figure 9.8 identifies the County's Hillside Management and designated Ridgeline Management Areas.

Figure 9.8: Hillside Management Areas and Ridgeline Management Map

Issues

1. Protection of Scenic Resources

Southern California has lost many of its scenic resources due to a variety of human activities. In the absence of adequate land use controls, many scenic resources have been adversely affected by unsightly development and sprawl. The visual pollution associated with the proliferation of billboards, signs, utility lines, and unsightly uses detracts from and often obscures many of the County's scenic resources. Another factor that significantly affects visual quality is air pollution. Man-made sources of air pollution, particularly tailpipe emissions from cars and trucks, contribute to the reduction of visibility and to the deterioration of some vegetation and wildlife.

2. Hillside Regulation

The geologic instability of mountain ranges is apparent in the numerous earthquake-induced landslide and liquefaction areas in the unincorporated areas. A majority of the mountains and hilly terrain have natural slope gradients of 25 percent or steeper, with a significant portion having natural slope gradients of 50 percent or steeper. Development of steep terrain can be costly and the need to provide public services and safety to these areas are costly to developers and public agencies. The best use for some mountainous terrain may be to let it remain as an airshed, watershed and natural habitat.

In addition, hillside development has the potential to change natural drainage systems and remove the native vegetation that once slowed water runoff. The removal of vegetation eliminates the natural containment of runoff. Water cannot then percolate into the soil, and instead gathers velocity as it flows down the hillside, causing accelerated erosion. Erosion that is accelerated beyond its normal rate can transport silt to streams and lakes, which may adversely affect water quality.

To conserve the natural beauty and public benefit of hillsides, hillside development land use activities that may result in environmental degradation are subject to regulations and design guidelines for impacts affecting, but not limited to, slope, soil erosion, natural drainage channels, and seismic and fire hazards. The Hillside Management Conditional Use Permit (CUP) is a regulatory vehicle to consider potential environmental degradation and hillside alteration in Hillside Management Areas (HMAs), which are areas where the slope is 25 percent or steeper.

The Hillside Management CUP allows clustering development at the base of the slope, limits grading, and ensures that the drainage configuration remains as natural as possible and will not adversely impact offsite property. Hillside design guidelines are referenced during the pre-development and permit processing phases to minimize hillside alteration, conserve ridgeline silhouettes, determine traffic circulation and building placement by topography, and incorporate trails where appropriate. By imposing these design conditions, a more sensitive development will occur in hillsides in a manner that respects the natural topography and biological resources of the area.

Goals and Policies for Scenic Resources

Goal C/NR 13: Protected visual and scenic resources.	
Topic	**Policy**
Scenic Resource Protection	Policy C/NR 13.1: Protect scenic resources through land use regulations that mitigate development impacts.
	Policy C/NR 13.2: Protect ridgelines from incompatible development that diminishes their scenic value.
	Policy C/NR 13.3: Reduce light trespass, light pollution and other threats to scenic resources.
	Policy C/NR 13.4: Encourage developments to be designed to create a consistent visual relationship with the natural terrain and vegetation.
	Policy C/NR 13.5: Encourage required grading to be compatible with the existing terrain.
	Policy C/NR 13.6: Prohibit outdoor advertising and billboards along scenic routes, corridors, waterways, and other scenic areas.
	Policy C/NR 13.7: Encourage the incorporation of roadside rest stops, vista points, and interpretive displays into projects in scenic areas.
Hillside Management	Policy C/NR 13.8: Manage development in HMAs to protect their natural and scenic character and minimize risks from natural hazards, such as fire, flood, erosion, and landslides.
	Policy C/NR 13.9: Consider the following in the design of a project that is located within an HMA, to the greatest extent feasible: • Public safety and the protection of hillside resources through the application of safety and conservation design standards; • Maintenance of large contiguous open areas that limit exposure to landslide, liquefaction and fire hazards and protect natural features, such as significant ridgelines, watercourses and SEAs.
	Policy C/NR 13.10: To identify significant ridgelines, the following criteria must be considered: • Topographic complexity; • Uniqueness of character and location; • Presence of cultural or historical landmarks; • Visual dominance on the skyline or viewshed, such as the height and elevation of a ridgeline; and • Environmental significance to natural ecosystems, parks, and trail systems.

VIII. Historic, Cultural, and Paleontological Resources

Historic, cultural, and paleontological resources are an important part of Los Angeles County's identity. This section sets forth goals and policies for the management and preservation of historic, cultural, and paleontological resources in the unincorporated areas.

Background

The resources described in this section include historic buildings, structures, artifacts, sites, and districts of historic, architectural, archaeological, or paleontological significance. They may be locations of important events that were turning points in the history, or be unique structures or groups of structures possessing distinct architectural features that depict a historic period.

Historic, cultural, and paleontological resources are non-renewable and irreplaceable. The County aims to promote public awareness of their value, and their public enjoyment should be fostered whenever possible. To this end, the County promotes cooperative efforts between public and private organizations to identify, restore, and conserve these resources.

Legislative Tools

The County embraces the importance of protecting historic, cultural, and paleontological resources and is guided in development decisions by federal, state, and local programs that officially recognize these resources. The following legislative tools improve the protection and enhancement of historic and cultural structures:

Local

- Los Angeles County Historical Landmarks and Records Commission reviews and recommends cultural heritage resources in the unincorporated areas for inclusion in the State Historic Resources Inventory.

State

- The California State Parks Department's Office of Historic Preservation maintains the State Historic Resources Inventory, a compilation of all resources formally determined eligible for or listed in the National Register of Historic Places, the California Register of Historical Resources or designated as State Historical Landmarks or Points of Historical Interest.

- CEQA provides guidelines for the identification and protection of archaeological sites, artifacts, and paleontological resources. If a project threatens an archaeological or paleontological resource, the project is required to provide mitigation measures to protect the site or enable study and documentation of the site. Assessment of these resources requires a survey prepared by a qualified archaeologist or paleontologist.

- The State Historical Building Code (SHBC) is a set of regulations adopted in 1979 that was created to improve the protection and enhancement of historic structures. The intent of SHBC is to protect California's architectural heritage by recognizing the unique construction problems inherent in historic buildings and offering an alternative code to deal with these problems. The SHBC provides alternative building regulations for the rehabilitation, preservation, restoration, or relocation of structures designated as historic buildings. SHBC regulations are intended to facilitate restoration or accommodate change of occupancy so as to conserve a historic structure's original or restored architectural elements and features.

Federal

- The Archaeological Resources Protection Act of 1979 protects archaeological resources and provides requirements for permit issuance to excavate or remove archaeological resources.
- The Native American Heritage Act of 1992 provides guidelines for the protection of Native American remains and artifacts.
- The National Register of Historic Places is the official list of the country's historic places worthy of preservation. Authorized by the National Historic Preservation Act of 1966, the National Park Service's National Register of Historic Places is part of a national program to coordinate and support public and private efforts to identify, evaluate, and protect the country's historic and archeological resources.
- National Historic Landmarks are nationally significant historic places designated by the Secretary of the Interior because they possess exceptional value or quality in illustrating or interpreting the heritage of the U.S. Today, fewer than 2,500 historic places bear this national distinction.

Historic Resource Sites

The State designates historic resources as Historical Landmarks or Points of Historical Interest and lists them in the California Register of Historical Resources. Historical Landmarks are resources of statewide significance, and Points of Historical Interest are resources of local significance. Many of the resources listed in the California Register are also of national significance and are listed in the National Register of Historic Places.

The County has many Historical Landmarks and Points of Historical Interest in its jurisdiction, including the remnants of vast ranchos, routes of early explorers, historic railroad lines, and the homes of prominent people who shaped local history. The State Historical Resources Commission administers the California Register, which lists 506 historic resources throughout Los Angeles County. While the great majority of these resources are located in cities, 29 are located in the unincorporated areas. Table 9.8 and Figure 9.9 display the location and designation of the 29 historic resources in the unincorporated areas.

Figure 9.9: Historic Resource Sites Policy Map

Table 9.8: Historic Resource Sites in the Unincorporated Areas

Altadena Town & Country Club	Lang Southern Pacific Station	Site of Llano Del Rio Cooperative Colony
Andrew McNally House	Mentryville	Soledad-Acton Schoolhouse
Antelope Valley Indian Museum	Mount Lowe Railway	St. Francis Dam Disaster Site
Bassett Elementary School	Oak of the Golden Dream	Sylvia Park Country Club Clubhouse
Christmas Tree Lane	Old Ridge Route	Topanga Christian Fellowship Church

Clear Creek Vista Point	Old Short Cut	Vasquez Rocks
Crank House	Pacific Electric Railway Company Substation No. 8	Woodbury Story House
Dominguez Adobe Ranch House	Pico Canyon Oil Field Well No. 4	Zane Grey Estate
General Charles S. Farnsworth County Park	Pomona Water Powerplant	Site of Llano Del Rio Cooperative Colony
Keyes Bungalow	Rancho San Francisco	

Significant General Fossil Localities

Over 1,000 fossil localities have been recorded and in excess of a million specimens have been collected in Los Angeles County. Although numerous places countywide have yielded fossils, especially in the hills and in the vicinity of Rancho La Brea, 11 significant general fossil localities have been identified, as shown in Table 9.10. Fossils continue to be discovered in Los Angeles County in association with ground-disturbing activities in fossil-rich areas.

Table 9.9: Significant General Fossil Localities in Los Angeles County

Location	Fossil Type	Formations
La Brea Tar Pits	N/A	N/A
Palos Verdes Peninsula	Mastadon, mammoth, horse, camel, sloth	Palos Verdes Sand
Palos Verdes Peninsula	Grey whale	San Pedro
Palos Verdes Peninsula	Fish, birds, sea lion, plants, baleen whale, horse, sloth, sea otter, mammoth, mastodon, bison, camel, tapir	Monterey Shale
Palos Verdes Peninsula	Dolphin	Monterey Shale
Santa Monica Mountains (Topanga Canyon)	Cypraeid gastropod	Topanga
Santa Monica Mountains (Old Topanga Canyon Road, Piuma Road)	Multiple	Topanga
Mint Canyon	Oldest hawk in California	Tick Canyon
Mint Canyon	Horse, elephant, camel	Mint Canyon
Puente Hills (Hacienda Heights)	Fish	Puente

Puente Hills (Diamond Bar)	Fish and leaves	Puente

Issues

Land Use Compatibility and the Importance of a Local Process

The primary threats historic, cultural, and paleontological resources are incompatible land uses and development on or adjacent to resources, a lack of a local registry, and the limitations of state and federal programs to protect resources.

Incompatible land uses and development can adversely affect resources by degrading the historic nature of the site through incompatible and inappropriate design features, allowing development that blocks views or hinders the public's enjoyment of a particular cultural site, or development that removes or demolishes significant historical features on existing buildings.

A local registry or landmarks commission, which can be crucial to a successful historic, cultural, and paleontological resource preservation program, is needed in the County to identify historic, cultural, and paleontological resources that are not identified by state and federal programs. A local process also encourages the participation of stakeholders who are familiar with the resources within their communities.

Officially-recognized resources are integral parts of the built and natural environments, and are important considerations in County land use actions. There may be other sites and structures that have not been identified and that have importance to local communities. In such cases, a community-based plan may designate these sites or structures as locally significant.

Goals and Policies for Historic, Cultural, and Paleontological Resources

Goal C/NR 14: Protected historic, cultural, and paleontological resources.	
Topic	**Policy**
Historic, Cultural, and Paleontological Resource Protection	Policy C/NR 14.1: Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.
	Policy C/NR 14.2: Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.
	Policy C/NR 14.3: Support the preservation and rehabilitation of historic buildings.
	Policy C/NR 14.4: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).
	Policy C/NR 14.5: Promote public awareness of historic, cultural, and paleontological resources.
	Policy C/NR 14.6: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

IX. Conservation and Natural Resources Element Implementation Programs

- SEA Preservation Program
- Mitigation Land Banking Program
- Oak Woodlands Conservation Management Plan Implementation
- Scenic Resources Ordinance
- Agricultural Resources Ordinance
- Mineral Resource Areas Ordinance
- Native Vegetation Conservation Ordinance
- Habitat Conservation Plan
- Water Quality Initiatives
- Watershed and Rivers Master Plans
- Urban Greening Program
- Open Space Land Acquisition Strategy
- Healthy and Sustainable Food Systems Ordinance
- Solar Energy Orientation Study

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Boxes]

Oak Woodlands

As defined by the California Department of Fish and Wildlife, an oak woodland is an oak stand with a greater than 10 percent canopy cover or that may have historically supported greater than 10 percent canopy cover. Associated with that canopy cover and connectivity are over 300 vertebrate species and more than 5,000 invertebrates, as well as hundreds of native understory plant species. The County is supporting the Resource Conservation District of the Santa Monica Mountains in its preparation of the Oak Woodlands Conservation Management Plan through the provision of technical advice from the Fire Department and DRP.

Low Impact Development (LID)

LID is a stormwater management strategy that seeks to mitigate the increase in pollution and stormwater volume that enters into storm drains due to the development of urban hardscapes. Urban runoff conveyed through municipal

storm drain systems is one of the causes of poor water quality at discharge locations of urban areas. LID seeks to mimic the hydrologic cycle of the natural environment that existed prior to urban development by implementing various site designs, materials, and design structures that can slow, infiltrate, filter, store, and detain stormwater runoff close to its source. These design techniques may include maintaining recharge areas, buffer zones, open spaces, and drainage courses. It also utilizes infiltration swales, grading strategies, and open drainage system to promote the percolation of stormwater at the source location. This in turn helps to recharge the natural groundwater that existed prior to development. The overall LID strategy and best management practices (BMPs) will reduce the amount of pollutants that will enter into the storm drain systems and will help to infiltrate stormwater at its source.

Integrated Regional Water Management Plans (IRWMP's)

Integrated Regional Water Management Plans (IRWMP's) define a clear vision and strategy for the sustainable management of water resources within a specific region delineated by one or more watersheds. IRWMP's generally contain an assessment of current and future water demand, water supply, water quality, and environmental needs. They address the challenges for delivering a stable and clean supply of water for the public, addressing stormwater and urban runoff water quality, providing flood protection, meeting water infrastructure needs, maximizing the use of reclaimed water, enhancing water conservation, and promoting environmental stewardship.

During the planning process, all stakeholders, including water distributors and purveyors, regional waterworks and sanitation districts, local public works departments, environmental organizations, non-profits, and other vested interests work together to develop common goals, objectives, and strategies. Since water related issues are addressed on a regional, watershed basis, these plans are instrumental in building consensus amongst the various stakeholders in the development and prioritization of an action plan that is complementary and leverages inter-jurisdictional cooperation, resources, and available funding. There are four IRWMP regions in Los Angeles County:

- Antelope Valley IRWMP;
- Upper Santa Clara River IRWMP;
- Greater Los Angeles County IRWMP; and
- Los Angeles Gateway Region.

For more information on the IRWMP's, please go to http://www.avwaterplan.org, http://www.scrwaterplan.org, or http://www.lawaterplan.org, respectively.

Hydromodification

Hydromodification is one of the leading sources of impairment in streams, lakes, estuaries, aquifers, and other water bodies in the country. Three major types of hydromodification activities—channelization and channel modification, dams, and stream bank and shoreline erosion—change a water body's physical structure as well as its natural function. These changes can cause problems, such as changes in flow, increased sedimentation, higher water temperature, lower dissolved oxygen, degradation of aquatic habitat structure, loss of fish and other aquatic populations, and decreased water quality. It is important to properly manage hydromodification activities to reduce non-point source pollution in surface and groundwater.

Sustainable Food Systems: Organic Farming, Urban Farming, and Community Gardens

Sustainable agriculture refers to the production of food without the depletion of the Earth's resources or polluting of the environment. Sustainable agriculture addresses the social, economic, and environmental effects of farming. For more information on organic farming practices, please visit the National Sustainable Agriculture Information Service web site at http://www.attra.org.

Organic farming is a form of agricultural production that avoids or largely excludes the use of synthetic fertilizers, pesticides, herbicides, plant growth regulators and livestock feed additives. Organic farmers use crop rotation, crop residues, animal manures, other beneficial organisms, and mechanical cultivation to maintain soil productivity and control pests. Organic farming is considered environmentally responsible in that the exclusion of chemicals prevents

the spread of these toxins into the air, water, soil, and food stuffs. There are an estimated 75 million acres of organic farmland in the world. In the U.S., “organic” foods must be certified by the U.S. Department of Agriculture. Any food that claims it is organic or organically produced must attain this certification. In Los Angeles County, there is a limited amount of organic farming, reaching only 111 acres in 2006.

Urban farming refers to the practice of cultivating, processing and distributing food in, or around a village, town or city. Urban farming can be practiced as a food producing activity, for income, and in some cases simply for recreation. However, urban farming contributes to food security and food safety in two ways: it increases the amount of food available to people living in cities; and, it allows fresh vegetables and fruits and meat products to be made available to urban consumers. Because urban farming promotes local food production and distribution, urban farming activities are generally seen as sustainable practices. For more information on urban farming, please visit http://www.urbanfarming.org.

The American Community Garden Association allows a broad definition of what a community garden entails. Community gardens have been shown to provide a catalyst for neighborhood and community development, beautify neighborhoods, preserve or create urban green space, and create income opportunities and economic development. For more information on community gardens, please visit http://www.communitygarden.org/.

Senate Bill (SB) 18

Senate Bill 18 (2004) requires California cities and counties to contact and consult with California Native American tribes prior to amending or adopting a general plan or specific plan, or designating land as open space. SB 18 requires city and county governments to consult with California Native American tribes to aid in the protection of traditional tribal cultural places through local land use planning. SB 18 provides California Native American tribes an opportunity to participate in local land use decisions at an early stage in the planning process for the purpose of protecting, or mitigating, impacts to sites of cultural significance. Involving tribes early allows for ample consideration of cultural places in the context of broad local land use policy, before individual site specific, project level land use decisions are made by a local government.

Chapter 10: Parks and Recreation Element

I. Introduction

The parks and recreational facilities of Los Angeles County play a vital role in maintaining a high quality of life for residents. The County owns and operates parks and recreational facilities in both unincorporated areas and cities in Los Angeles County. These facilities serve the local needs of communities in the unincorporated areas, as well as regional needs countywide.

The Parks and Recreation Element addresses the General Plan's Guiding Principles by providing policy direction for the maintenance and expansion of the County's parks and recreation system. The purpose of the Parks and Recreation Element is to plan and provide for an integrated parks and recreation system that meets the needs of residents. The goals and policies set forth in this Element address the growing and diverse recreation needs of the communities served by the County.

II. Background

Park and recreation planning in the County is guided in part by several important plans and studies. Two documents that guide County park planning are the Parks and Recreation Strategic Plan and the Strategic Asset Management Plan (SAMP).

In 1992, the Department of Parks and Recreation (DPR) prepared the Parks and Recreation Strategic Plan for 2010 to guide the decision-making process for the future development of parks and implementation of recreation programs. The Strategic Plan assesses existing park acreage and future recreation needs; identifies goals, objectives, and policies for appropriate future actions; and includes recommendations based on needs, goals and public involvement to guide the future direction of parks and recreation. In 2003, DPR updated the Strategic Plan to create a road map to meet the various community recreation needs as the population continued to grow and change. The document identifies important trends and opportunities, while setting the Department's direction for a five-year period.

In 2004, DPR prepared the SAMP for 2020 to provide County decision-makers, park planners, and the public with updated information and analyses, and to prioritize the allocation of limited economic resources for the provision of parks, recreation facilities, and open space. The SAMP includes park inventories, identifies needs, and provides recommendations.

Parkland Classifications

For planning purposes, parks are classified based on the size, use, and physical characteristics of the land. In addition, the traditional template of local and regional parks has been expanded to capture diverse opportunities for acquisition and development of parkland. The County's park system, including facilities that are owned, operated, and maintained by the County, totals nearly 70,000 acres. Table 10.1 summarizes the acreage of local and regional parkland, by Planning Area. A complete inventory of the parks operated by DPR can be found in Appendix F.

Table 10.1: Existing County Parkland, by Planning Area

	Parkland, in Acres

Planning Area	Local	Regional	Total
Antelope Valley	50	3,870	3,920
Coastal Islands	0	41,000	41,000
East San Gabriel Valley	220	3,440	3,660
Gateway	51	816	867
Metro	111	398	509
Santa Clarita Valley	71	14,425	14,497
San Fernando Valley	9	603	611
Santa Monica Mountains	0	0	0
South Bay	26	593	618
West San Gabriel Valley	48	3427	3,475
Westside	22	414	436
Total	609	68,986	69,594

Source: Los Angeles County Department of Parks and Recreation, July2013.

The County offers a wide variety of parks and recreation resources, which generally fall under two systems: local park system and regional park system. In addition, the County offers multi-user trails and access to other recreation facilities, such as city parks and facilities and private recreation facilities.

Local Park System

The local park system consists of parks of varying sizes that meet local needs and offer opportunities for daily recreation. This system includes community parks, neighborhood parks, pocket parks, and park nodes, and is summarized in Table 10.2.

Community Parks

Community parks are typically 10 to 20 acres, and serve several neighborhoods within a 1 to 2 mile radius of the park. Community parks that are located in residential neighborhoods serve both the needs of the community park service radius and neighborhood park service radius. Community parks provide opportunities for a wide variety of active and passive recreation activities. The amenities programmed into a community park are focused on meeting the needs of several neighborhoods or large sections of the community. They allow for group activities and recreational opportunities that may not be feasible in neighborhood parks. Amenities for community parks can include informal open play areas, children's play apparatus, group picnic areas with overhead

shelters, barbecues, lighted sports fields, basketball courts and tennis courts, public restrooms, concession buildings, maintenance buildings, onsite parking and information kiosks.

Neighborhood Parks

Neighborhood parks are typically 3 to 10 acres, and serve residents living within a half mile radius of the park. Neighborhood parks provide space, programs and recreation activities to create healthy social networks within residential communities. The common objective of all neighborhood parks is to bring people together to recreate and socialize close to home. Ease of access and walking distance uninterrupted by major roads and other physical barriers are important factors in locating neighborhood parks. Neighborhood parks should be well-connected to other public facilities, such as schools and libraries. Amenities for neighborhood parks can include informal open play areas, children's play apparatus, picnic tables, picnic shelters, barbecues, practice sports fields, basketball, tennis and volleyball courts, public restrooms, information kiosks, recreation offices, and onsite parking.

Pocket Parks

Pocket parks are less than three acres in size, and serve residential or business areas within a quarter mile radius or within walking distance. They are best used to meet limited or specialized recreational needs. Pocket parks can provide landscaped public use areas in industrial and commercial areas, scenic overlooks, linkage to a community pathway system, and urban infill sites in park poor communities. Pocket parks generally do not have onsite parking. Amenities for pocket parks can include both active and passive features, depending on the community's setting and needs, such as children's play apparatus, picnic areas, fountains and seating areas. Due to the limited amenities included in pocket parks, they are typically not included in the service radius analysis.

Park Nodes

Park nodes are small pieces of open space that serve as public destinations, connections, and community defining spaces. Nodes provide physical and visual breaks to the urban landscape and connect various spaces, such as waterways, streets, trails, and greenways. Park nodes are used as gathering and rest areas, and serve as opportunities for social and cultural exchange. Examples of park nodes include equestrian and hiking trail heads, bike rest stops and stations with lockers and repair areas, neighborhood focal points, and passive amenities, such as plazas, rest areas, playgrounds, landmarks, and public art installations.

Table 10.2: Local Park System Summary

Facility	Typical Park Features and Amenities
Community Park Acres Per Thousand Population: 4/1,000 Suggested Acreage:10 to 20 acres Service Area:1 to 2 miles	Passive park amenities including but not limited to: informal open play areas, children's play apparatus, family and group picnic areas with overhead shelters, barbecues. Active sports activities including but not limited to: lighted sports fields, basketball courts and tennis courts. Additional amenities may include aquatics complex, skate park, arena soccer, roller hockey, community gardens, and dog parks. Park facilities including but not limited to: public restrooms,

	concession building, community buildings, maintenance building and onsite parking and information kiosks.
Neighborhood Park Acres Per Thousand Population: 4/1,000 Suggested Acreage: 3 to 10 acres Service Area:1/2 mile	Passive park amenities including but not limited to: informal open play areas, children's play apparatus, group picnic areas with overhead shelters, barbecues. Active park amenities including but not limited to: practice sports fields, basketball, tennis, and volleyball courts. Park facilities including but not limited to: public restroom, onsite parking and information kiosks.
Pocket Park Acres Per Thousand Population: 4/1,000 Suggested Acreage: less than 3 acres Service Area:1/4 mile	Passive park amenities including but not limited to: picnic areas and seating areas. Active park amenities including but not limited to: children's play apparatus.
Park Node Acres Per Thousand Population: 4/1,000 Suggested Acreage:1/4 acre or less No service radius area	Varies; can include: plazas, rest areas, playgrounds, landmarks and public art installations

Regional Park System

The regional park system is intended to meet the park and recreation needs of residents and visitors throughout Los Angeles County. This system consists of community regional parks, regional parks, and special use facilities, and is summarized in Table 10.3.

Community Regional Parks

Community regional parks are typically 20 to 100 acres, and have a service radius of 20 miles. Community regional parks protect and conserve natural resources, preserve open spaces, and provide recreational facilities that are not available in neighborhood or community parks. Amenities for community regional parks can include a jogging exercise course, informal open play areas, children's play apparatus, group picnic areas with overhead shelters, barbecues, lighted sports fields, basketball courts and tennis courts, information kiosks, public restrooms, concession building, recreation offices, maintenance buildings, and onsite parking. Community regional parks may also have one or more of the following features: multiple sports facilities, aquatics center, fishing lake, community building and gymnasium, and scenic views and vistas.

Regional Parks

Regional parks are typically greater than 100 acres in size, and have a service radius of 25 miles or more. They include unique areas such as lakes, wetlands, auditoriums, water bodies, and campgrounds, in addition to the active recreational facilities offered in community and community

regional parks. Many of the recreation activities are associated with experiencing the natural environment. A regional park may also perform important ecological and environmental functions, including serving as wildlife habitats. The connection of these parks to natural areas is often vital to ensuring a healthy ecological system. Amenities for regional parks can include picnic areas, nature centers, trail systems, scenic drives, campgrounds, water areas for swimming, fishing and boating, and in some cases, sport fields.

Special Use Facilities

Special use facilities are generally single purpose facilities that serve greater regional recreational or cultural needs. One notable example is the Hollywood Bowl. Special use facilities require adequate public access and sufficient buffers to protect adjacent residential users and to insulate the park from commercial or industrial development. Special use facilities can meet both passive (e.g., historic and cultural facilities, natural areas, habitat preservation areas, arboreta and botanical gardens, and nature centers) and active (e.g., golf courses and driving ranges, equestrian centers, off highway vehicle parks, water parks or aquatic facilities, and skate parks) needs within the region. There are no size criteria or service radius areas associated with special use facilities.

Table 10.3: Regional Park System Summary

Facility	Typical Park Features and Amenities
Community Regional Park Acres Per Thousand Population: 6/1,000 Suggested Acreage: 20 to100 acres Service Area: up to 20 miles	Passive park amenities including but not limited to: informal open play areas, children's play apparatus, group picnic areas with overhead shelters, barbecues. Active sports activities including but not limited to: lighted sports fields, basketball courts and tennis courts. Additional amenities may include one or more of the following features: multiple sports facilities, aquatics center, fishing lake, community building and gymnasium, and scenic views and vistas. Park facilities including but not limited to: public restrooms, concession building, community buildings, maintenance building and onsite parking and information kiosks.
Regional Park Acres Per Thousand Population: 6/1,000 Suggested Acreage: greater than 100 acres Service Area: 25+ miles	Passive park amenities including but not limited to: group picnic areas with overhead shelters, barbecues. Additional amenities may include one or more of the following features: lakes, wetlands, auditoriums, water bodies for swimming, fishing and boating, and sports fields.
Special Use Facility Acres Per Thousand Population: 6/1,000	Generally, single purpose facilities. Can include passive features such as: wilderness parks, nature preserves, botanical gardens and nature centers.

No size criteria No assigned service radius area	Active uses can include: performing arts, water parks, aquatic facilities, skate parks, golf driving ranges and golf courses.

Trails

The County offers unique trail user opportunities that showcase its diverse scenery and provide connectivity to parks, open spaces, cultural resources, and wilderness areas. Los Angeles County has an ideal climate for trail user activities on most days of the year.

Typical trail uses range from hiking and walking, to mountain biking and horseback riding, with many users participating in more than one activity. The quality of the trail experience is directly proportional to the state of the visual, natural, and educational environment through which the trail passes. The wide variety of experiences, include but are not limited to: exercise, solitude, spiritual practices, physical and mental well-being, building social networks, testing athletic skills, and experiencing nature. The County strives to make all trails multi-use and accessible to all non-motorized users including pedestrians, equestrians, and mountain bicyclists, where appropriate.

In May 2011, the Board of Supervisors adopted the County of Los Angeles Trails Manual, which provides County staff and developers with guidelines and standards for trail planning, design, development, and maintenance of County trails. The purpose of the Trails Manual is to provide guidance to County departments that interface with trail planning, design, development and maintenance of hiking, equestrian, and mountain biking recreational trails, while addressing physical and social constraints and opportunities associated with the diverse topographic and social conditions that occur in the unincorporated areas.

Figure 10.1 depicts the County's regional trail system.

Figure 10.1: Regional Trail System Map

Other Recreation Facilities

In addition to local and regional parks and trails, residents are served by the following types of recreation facilities: multi-benefit parks, school sites, city parks and facilities, private recreational facilities, and greenways.

Multi-Benefit Parks

Multi-benefit parks and open spaces are created through collaborative efforts among city, county, state, and federal agencies; private organizations; schools; private landowners; and industries. These parks are characterized as having more than one function and contributing to multiple program goals. There are a number of applications of multi-benefit parks including: utility corridors and flood control basins that can serve as areas for active or passive recreation; school sites located adjacent to parks that can share facilities, such as parking and park amenities; watershed areas that can protect critical wildlife habitats, preserve open space, provide trails for recreation, and contribute to water conservation objectives; and water districts, where trails can be located adjacent to flood control channels and trailhead parks.

School Sites

The County works with school districts to organize, promote, and conduct joint recreational and educational programs. These community recreation agreements are a form of joint-use agreement, where either a school or park facility may be put to some recreational use by the other party in exchange for some facility improvement and/or maintenance. A park does not have to be adjacent to a school (i.e., share a common boundary) for an agreement to be viable.

City Parks and Facilities

City parks and facilities that are located close to the borders of the unincorporated areas are enjoyed by city and County residents alike. Similarly, local County parks that are located within or close to the borders of cities provide recreational amenities for both populations. This overlap in local park service radius is an important factor to consider in the placement of new local County parks.

Private Recreational Facilities

Private recreational facilities play an important role in meeting recreational needs. The network of private recreational facilities consists of churches, health and fitness clubs, and other organizations that offer a variety of programs and facilities. This Element does not include an inventory of private recreational facilities, and as the County does not control, maintain, or program private recreational facilities, these resources are not credited toward the County's acreage goals for public parks.

Greenways

Greenways provide a linear area along natural corridors, and often follow features such as rivers, man-made waterways, drainage channels, and utility easements. Greenways can accommodate various modes of uninterrupted pedestrian travel on pathways, including walking, jogging, and bicycling, and can include recreation areas and natural landscape features.

Recreation Programs

Along with access to parks and recreation facilities, the availability of a wide range of recreation programs is critical to the quality of life in any community. A comprehensive offering of effective recreation programs benefit individuals, neighborhoods, and households of all ages, income levels, cultures and abilities by:

- Offering opportunities to play, grow, and learn;
- Providing a sense of place and of belonging;
- Promoting health and wellness, including obesity prevention;
- Improving neighborhood and community connections, and problem-solving;
- Enhancing community cohesiveness while honoring diversity;
- Helping protect natural environments; and
- Providing positive youth development opportunities.

Recreation programs can range from organized sports, tournaments, scheduled classes, and special events, to more individualized, casual leisure activities such as family picnics and walking. Effective recreation programs promote the constructive use of leisure time and a lifelong commitment to a healthy lifestyle.

DPR offers a wide variety of recreation programs to meet the diverse needs of residents. These programs serve a diverse group of stakeholders including, but not limited to: preschool-aged children, elementary school-aged youth, middle school-aged youth, high school-aged youth, adults, seniors and households.

Parkland Dedication and Funding

As specified in P/R Policy 3.1, the County standard for the provision of parkland is 4 acres of local parkland per 1,000 residents of the population in the unincorporated areas, and 6 acres of regional parkland per 1,000 residents of the total population of Los Angeles County. This section describes the County's parkland dedication requirements, as well as funding mechanisms for the planning and development of parks and recreation facilities.

Quimby Act

The California Quimby Act, which is part of the Subdivision Map Act, applies to residential subdivisions and permits the County, by ordinance, to require the dedication of land or payment of fees for park and recreational purposes. As part of its approval of a subdivision, the County may require the subdivider to provide land to serve the park and recreational needs of future residents of the subdivision.

The Quimby Act establishes a standard of dedicating 3 acres of parkland per 1,000 residents for subdivisions. However, as a condition of zone change approval, General Plan amendment, specific plan approval, or development agreement, the County may require a subdivider to dedicate land according to the following General Plan standards of 4 acres of local parkland per 1,000 residents in the unincorporated areas, and 6 acres of regional parkland per 1,000 residents. This requirement is justified as long as an appropriate nexus between the project and the dedication can be shown.

Quimby fees may be used to acquire land for local park purposes, improve local parkland (includingexisting local parks), or both acquire and develop local parkland. To convert a Quimby obligation inland (acres) into the Quimby fee, the land obligation is multiplied by the Representative Land Value (RLV) per acre for the Park Planning Area (PPA) in which the subdivision is located. RLVs are adjusted annually based upon changes in the Consumer Price Index.

Because of the need for usable public parkland for active recreation purposes, DPR rarely gives any Quimby credit for parkland exceeding a slope of three percent and instead gives credit for the "net" park acreage (maximum slope of three percent) the County receives. As specified in P/R Policy 3.10, DPR does not accept undeveloped park sites from developers. This means that the developer is required to provide a developed park to the County on a "turn-key" basis and receives credit for the costs of developing the public park up to and against any remaining Quimby obligation, after accounting for the net acreage dedicated to the County.

For the purposes of the County's Quimby Act Ordinance, the unincorporated areas are divided into 47 PPAs, based on location and neighborhood characteristics. The Quimby fees generated in one PPA may not be spent in another area.

Proposition A Funds

Proposition A Funds may be used to fund the development, acquisition, improvement, restoration and maintenance of parks; recreational, cultural and community facilities; and open space lands. These funds are administered by the Los Angeles County Regional Park and Open Space District. The Open Space District was created when voters approved Proposition A in 1992. Proposition A authorized an annual assessment on nearly all of the 2.25 million parcels of real property. Proposition A funded $540 million for the acquisition, restoration or rehabilitation of real property for parks and park safety, senior recreation facilities, gang prevention, beaches, recreation, community or cultural facilities, trails, wildlife habitats, or natural lands, and maintenance and servicing of those projects. In 1996, voters approved another Proposition A to fund an additional $319 million for parks and recreation projects and additional funds for maintenance and to service those projects.

Landscaping and Lighting Districts

The California Landscaping and Lighting Act of 1972 authorizes local legislative bodies to establish benefit related assessment districts, or Landscaping and Lighting Districts (LLADs) and to levy assessments for the construction, installation, and maintenance of certain public landscaping and lighting improvements. LLADs may be established to maintain local public parks.

Mello-Roos District

A developer may apply to the County to form a Mello-Roos District pursuant to the California Mello-Roos Community Facilities Act of 1982 to develop and maintain park improvements. Pursuant to County guidelines, the parks should be regional in nature, and have an impact or benefit beyond the associated subdivision.

III. Issues

1. Park Planning For a Diversity of Needs

Parks and recreation facilities are used for various purposes by a wide range of users. Because the needs of park users are diverse, no individual park or recreational facility can meet the needs of all users. Therefore, a diverse and comprehensive system of facilities is needed to provide a wide range of recreational opportunities.

A mistaken assumption is that parks and recreation planning only involves looking at population projections and then providing more of what already exists. Numerous studies have shown that parks and recreation needs and preferences vary by age, race and ethnicity, and other factors. In addition, the physical distribution of parkland and park accessibility by underrepresented groups and underserved populations, including low-income and transit-dependent communities, are important considerations. The County must understand and plan for these diverse park and recreation needs.

Based on data from a wide variety of sources, outdoor recreation activities with learning components, trail related experiences, and water recreation will increase. Motorized recreation, augmented with navigational equipment, will also continue to grow. As the population evolves and changes, there will be many new supporters and advocates for outdoor recreation and opportunities for partners to contribute to a better quality of life. Cooperation and partnerships between public, private, and nongovernmental service providers can ensure a seamless and comprehensive system of outdoor recreation opportunities and experiences.

Enhanced collaboration refers to the idea of providing more and improved park and recreation services through multiple use facilities and partnerships with other public, non-profit, and private organizations. The County must work with other agencies to leverage financial, land, and other resources to meet the growing and diverse recreation needs of residents.

2. Acquisition and Development of Additional Parkland

There are large areas that are underserved by parks and recreational facilities. Nearly two out of three children do not live within walking distance (one quarter mile) of a park, playground, or open space. DPR conducted a preliminary gap analysis to determine the need for additional parks and to identify park poor areas. The Gap Analysis Study shows that the unincorporated areas face a significant deficit in local parkland: 3,620 acres, as shown in Table 10.4. Overall, there is a surplus of regional parkland due to the inclusion of the 41,000 acre Santa Catalina Island Regional Park in the parks inventory. More noteworthy is the fact that 8 of the 11 planning areas have significant deficits in regional parkland. Based on population projections, the unincorporated areas would have deficits of 5,986 acres in local parkland and 5,046 acres in regional parkland by the year 2035 if no new parks are created.

The Gap Analysis Study represents a first step toward identifying park-deficient neighborhoods in the unincorporated areas. Figures 10.2 and 10.3 show the service radius for local and regional parks. Areas that do not lie within the service radius are considered underserved by parks and recreation facilities.

Figure 10.2: Community Regional and Regional Park Service Radius Map

Figure 10.3: Community, Neighborhood and Pocket Park Service Radius Map

Table 10.4: Existing County Parkland by Planning Area, Year 2010

	Local Parkland Standard 4 Acres / 1,000 Population			**Regional Parkland Standard 6 Acres / 1,000 Population**		
Planning Areas	**Unincorporated Population 2010**	**Parkland Acreage**	**Surplus / Deficit Acreage**	**Countywide Population 2010**	**Parkland Acreage**	**Surplus / Deficit Acreage**
Antelope Valley	73,488	50	-244	382,868	3,870	1,573
Coastal Islands	368	0	-1	4,096	41,000	40,975
East San Gabriel Valley	234,251	220	-717	933,116	3,440	-2,159
Gateway	103,094	51	-361	1,666,588	816	-9,183
Metro	306,768	111	-1,116	1,819,084	398	-10,517
Santa Clarita Valley	94,907	71	-308	271,227	14,425	-12,798
San Fernando Valley	24,790	9	-91	1,768,978	603	-10,011
Santa Monica Mountains	19,222	0	-77	85,785	0	-515
South Bay	69,612	26	-253	1,016,674	593	-5,507
West San Gabriel Valley	103,181	48	-365	895,543	3,427	-1,946
Westside	27,407	22	-87	974,646	414	-5,434

Total	**1,057,088**	**609**	**-3,620**	**9,818,605**	**68,986**	**10,074**

Sources: 2010 U.S. Census and Los Angeles County Department of Parks and Recreation, July 2013.

Table 10.5: Projected Future County Parkland Need, Year 2035

	Local Parkland Standard 4 Acres / 1,000 Population			**Regional Parkland Standard 6 Acres / 1,000 Population**		
	Unincorporated Population Projection 2035	**Current Local Parkland Acreage**	**Surplus / Deficit Acreage**	**Countywide Population Projection 2035**	**Current Regional Parkland Acreage**	**Surplus / Deficit Acreage**
Total	1,648,695	609	-5,986	12,338,623	68,986	-5,046

Source: 2008 SCAG RTP and Los Angeles County Department of Parks and Recreation, July 2013.

A good community parks and recreation system is based on the quality of facilities and services provided, as well as the ability to anticipate and respond to changing trends. According to the report, *Park and Recreation Trends in California 2005*, changes in the size and composition of State's population will drive the impacts on the delivery of parks and recreation services in the future.

A more in-depth gap analysis will be conducted as part of the County's future Parks and Recreation Master Plan. This analysis will involve a detailed review of topics such as demographic, geographic, land use, and transportation data for each Planning Area to determine its park deficiencies in terms of acreage, accessibility, and suitability. For more information on the Parks and Recreation Master Plan, please refer to Chapter 16: General Plan Implementation Programs.

3. Improved Trail Systems

Trails offer opportunities for people to hike, walk, run or ride, and encourage people to connect with nature. As linear parks, trails help make the region more livable and provide communities with access to increased health and fitness activities. Trails can also promote increased activity with smaller amounts of land than large parks, and can often use leftover or unwanted land.

As the population continues to grow and the region becomes increasingly urbanized, the demand for outdoor recreation opportunities and trails will increase. One way to meet this demand is to create and maintain an adequate multi-use trail system that is accessible to all residents and to provide continuous enjoyment though increased and expanded connectivity. Additional trails are also needed closer to population centers in the central and southwestern portions of Los Angeles County, where more residents could conveniently access and reap the recreation, health, and mobility benefits of trails.

Multi-use trails are used by equestrians, cyclists, hikers, and runners. As the amount of public land continues to decrease, the need for multi-use trails will continue to grow, as well as the need to find solutions to possible user conflicts. An expanded multi-use trial system can alleviate user conflicts, while also providing increased access to this important health and fitness system.

4. Protection of Historical and Natural Resources on County Park Properties

Many County parks contain important historical and natural resources that must be protected. Historic resources on County park properties include buildings, collections, landscapes, bridges, and other physical features. The maintenance, repair, rehabilitation, restoration, or reconstruction of historical resources are carried out in a manner that is consistent with the Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.

Natural resources include natural areas, sanctuaries, and open space preserves. There is a need to establish linkages that will promote connectivity to enhance the movement of wildlife and promote genetic health among native species of plants and animals. Continuous efforts to expand the regional park system are necessary to protect and conserve natural resources regardless of the required park acreage based upon park standards. Open space areas that are established for conservation purposes, such as wildlife sanctuaries, provide a greater benefit than the relative location of the site to populated areas. In the regional park system, a key consideration is the ecological health of natural environments. Accessibility to regional facilities is also important. Access may be enhanced by providing improved public transportation to connect population centers with regional parks.

Threats to these resources include both intentional and unintentional acts, such as deferred maintenance, renovation or improvements that significantly alter or damage the resource, acts of vandalism and theft, or overuse by park users.

5. Sustainable Parks

It is important for County park properties to contribute to the County's goals of sustainability, carbon footprint reduction, water conservation, and energy conservation. Sustainable design and management are necessary to promote responsible environmental practices, enhance social benefits, and reduce the cost of ownership and management.

All park projects must be considered within their surrounding context. Landscapes need to be treated as interdependent and interconnected spaces that share systems of soil, topography, vegetation, and water. By understanding these larger patterns and employing a comprehensive approach, parks can be designed in a way that helps repair and restore ecosystems rather than detract from them. For example, designing a park to take advantage of natural processes is one way to achieve sustainability through site design.

Funding is the main challenge facing the design and implementation of sustainable strategies. However, sustainable design and management practices will help reduce operation and maintenance costs in the long run. In addition, regular maintenance and preventative measures can prolong the life of existing buildings and facilities on County park properties, and reduce the need for new or expanded facilities.

IV. Goals and Policies

Goal P/R 1: Enhanced active and passive park and recreation opportunities for all users.	
Topic	**Policy**
Park Programming	Policy P/R 1.1: Provide opportunities for public participation in designing and planning parks and recreation programs.
	Policy P/R 1.2: Provide additional active and passive recreation opportunities based on a community's setting, and recreational needs and preferences.
	Policy P/R 1.3: Consider emerging trends in parks and recreation when planning for new parks and recreation programs.
	Policy P/R 1.4: Promote efficiency by building on existing recreation programs.
Park Management	Policy P/R 1.5: Ensure that County parks and recreational facilities are clean, safe, inviting, usable and accessible.
	Policy P/R 1.6: Improve existing parks with needed amenities and address deficiencies identified through the park facility inventories.
	Policy P/R 1.7: Ensure adequate staffing, funding, and other resources to maintain satisfactory service levels at all County parks and recreational facilities.
	Policy P/R 1.8: Enhance existing parks to offer balanced passive and active recreation opportunities through more efficient use of space and the addition of new amenities.
	Policy P/R 1.9: Offer more lighted playing fields using energy efficient light fixtures where appropriate to extend playing time.
	Policy P/R 1.10: Ensure a balance of passive and recreational activities in the development of new park facilities.
	Policy P/R 1.11: Provide access to parks by creating pedestrian and bicycle-friendly paths and signage regarding park locations and distances.
Goal P/R 2: Enhanced multi-agency collaboration to leverage resources.	
Topic	**Policy**
Collaboration and Financing	Policy P/R 2.1: Develop joint-use agreements with other public agencies to expand recreation services.
	Policy P/R 2.2: Establish new revenue generating mechanisms to leverage County resources to enhance existing recreational facilities and programs.
	Policy P/R 2.3: Build multi-agency collaborations with schools, libraries, non-profit, private, and other public organizations to leverage capital and operational resources.

	Policy P/R 2.4: Utilize school and library facilities for County sponsored and community sponsored recreational programs and activities.
	Policy P/R 2.5: Support the development of multi-benefit parks and open spaces through collaborative efforts among entities such as cities, the County, state, and federal agencies, private groups, schools, private landowners, and other organizations.
	Policy P/R 2.6: Participate in joint powers authorities (JPAs) to develop multi-benefit parks as well as regional recreational facilities.
	Policy P/R 2.7: Increase communication and partnerships with local law enforcement, neighborhood watch groups, and public agencies to improve safety in parks.
Mass Care and Shelters	Policy P/R 2.8: Evaluate and enhance facilities and amenities with respect to alternative use of parks to carry out Mass Care and Shelter operations in the wake of a disaster.
Goal P/R 3: Acquisition and development of additional parkland.	
Topic	**Policy**
Parkland Acquisition and Dedication	Policy P/R 3.1: Acquire and develop additional local and regional parkland to meet the following County standards: 4 acres of local parkland per 1,000 residents in the unincorporated areas and 6 acres of regional parkland per 1,000 residents of the total population of Los Angeles County.
	Policy P/R 3.2: For projects that require zone change approvals, general plan amendments, specific plans, or development agreements, require developers to provide for local and regional parkland above and beyond their Quimby obligations as based on an appropriate nexus study.
	Policy P/R 3.3: Require as a condition of residential subdivision approval that a subdivider create a LLAD to maintain the park.
	Policy P/R 3.4: Provide additional parks in communities with insufficient local parkland as identified through the gap analysis.
	Policy P/R 3.5: Expand the supply of regional parks by acquiring land that would: 1) provide a buffer from potential threats that would diminish the quality of the recreational experience; 2) protect watersheds; and 3) offer linkages that enhance wildlife movements and biodiversity.
	Policy P/R 3.6: Collaborate with other public, non-profit, and private organizations to acquire land for parks.
	Policy P/R 3.7: Pursue a variety of opportunities to secure property for parks and recreational facilities, including purchase, grant funding, private donation, easements, surplus public lands for park use, and dedication of private land as part of the development review process.
Parkland Development	Policy P/R 3.8: Mitigate impacts from freeways to new parks to the extent feasible.
	Policy P/R 3.9: Site new parks near schools, libraries, senior centers and other community facilities where possible.

	Policy P/R 3.10: The Department of Parks and Recreation does not accept undeveloped park sites from developers. Developers are required to provide a developed park to the County on a "turn-key" basis and receive credit for the costs of developing the public park up to and against any remaining Quimby obligation, after accounting for the net acreage dedicated to the County.
Goal P/R 4: Improved accessibility and connectivity to a comprehensive trail system including rivers, greenways, and community linkages.	
Topic	**Policy**
Trail System	Policy P/R 4.1: Create multi-use trails to accommodate all users.
	Policy P/R 4.2: Develop staging areas and trail heads at strategic locations to accommodate multi-use trail users.
	Policy P/R 4.3: Develop a network of feeder trails into backbone trails.
	Policy P/R 4.4: Maintain and design multi-purpose trails in ways that minimize circulation conflicts among trail users.
	Policy P/R 4.5: Collaborate with other public, non-profit, and private organizations in the development of a comprehensive trail system.
	Policy P/R 4.6: Create new multi-use trails that link community destinations including parks, schools and libraries.
Goal P/R 5: Protection of historical and natural resources on County park properties.	
Topic	**Policy**
Park Resource Preservation	Policy P/R 5.1: Preserve historic resources on County park properties, including buildings, collections, landscapes, bridges, and other physical features.
	Policy P/R 5.2: Expand the collection of historical resources under the jurisdiction of the County, where appropriate.
	Policy P/R 5.3: Protect and conserve natural resources on County park properties, including natural areas, sanctuaries, and open space preserves.
	Policy P/R 5.4: Ensure maintenance, repair, rehabilitation, restoration, or reconstruction of historical resources in County parks and recreational facilities are carried out in a manner consistent with the most current Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.
Education and Programming	Policy P/R 5.5: Preserve and develop facilities that serve as educational resources that improve community understanding of and appreciation for natural areas, including watersheds.
	Policy P/R 5.6: Promote the use of County parks and recreational facilities for educational purposes, including a variety of classes and after school programs.

	Policy P/R 5.7: Integrate a range of cultural arts programs into existing activities, and partner with multicultural vendors and organizations.
Goal P/R 6: A sustainable parks and recreation system.	
Topic	**Policy**
Sustainable Parks System	Policy P/R 6.1: Support the use of recycled water for landscape irrigation in County parks.
	Policy P/R 6.2: Support the use of alternative sources of energy, such as wind and solar sources to reduce the use of energy at existing parks.
	Policy P/R 6.3: Prolong the life of existing buildings and facilities on County park properties through preventative maintenance programs and procedures.
	Policy P/R 6.4: Ensure that new buildings on County park properties are environmentally sustainable by reducing carbon footprints, and conserving water and energy.
	Policy P/R 6.5: Ensure the routine maintenance and operations of County parks and recreational facilities to optimize water and energy conservation.

V. Park and Recreation Element Implementation Program

- County Parks and Recreation Master Plan
- Trails Program
- Parks Sustainability Program

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Boxes]

Parks, Playgrounds, and Beaches in the Los Angeles Region (1930)

The Olmsted Brothers and Bartholomew report entitled *Parks, Playgrounds, and Beaches in the Los Angeles Region* was the first comprehensive parks and open space plan for the greater Los Angeles area. The report proposed a system of parks, parkways, children's playgrounds, and public beaches. It was a model of ambitious, intelligent, and sensitive planning commissioned at a time when land was available. However, only segments of the report have been implemented to date. Through its planning efforts and collaboration with other agencies and jurisdictions, the DPR hopes to revive and fulfill the Olmsted and Bartholomew vision to the maximum extent possible.

Green Visions Plan (2007)

Green Visions is a joint venture between the University of Southern California and the region's land conservancies, including the Rivers and Mountains Conservancy, Santa Monica Mountains Conservancy, Coastal Conservancy, and the Baldwin Hills Conservancy. The Green Visions Plan offers a guide to habitat conservation, watershed health and recreational open space for the Los Angeles metropolitan region. The electronic tools and data developed as part of Green Visions are intended to expand the analytic and planning capabilities of local agencies and organizations to,

among other things, reduce the fragmented, piecemeal approach to regional resource planning.

Greater Los Angeles County Integrated Regional Water Management Plan (2006)

The 2006 Greater Los Angeles County Integrated Regional Water Management Plan (IRWMP) addresses water resource issues of the Los Angeles region in an integrated and collaborative manner. Recreation and open space are important components of the IRWMP, with 6 of the 13 priority projects providing open space, habitat, and recreational benefits. The IRWMP also recommends that 30,000 acres of new parkland be acquired to keep pace with population growth.

SCAG Regional Comprehensive Plan (2008)

In 2008, the Southern California Association of Governments (SCAG) completed the Regional Comprehensive Plan (RCP) as a vision of how Southern California can balance resource conservation, economic vitality, and quality of life. The RCP presents a visionary, regionwide approach to coordinate and facilitate the preservation of open space in Southern California. Specifically, the Plan includes an “Open Space and Habitat” chapter, which focuses on community open space, natural lands, and farmlands. Community open space includes areas that enhance the quality of life and completes interconnected networks of parks, trails, greenbelts, community gardens, and urban forests serving the region’s communities.

Chapter 11: Noise Element

I. Introduction

Noise levels can have a significant impact on quality of life. Excessive levels of noise result in increased neighborhood annoyance, dissatisfaction, and in some cases, health and safety hazards. Due to Los Angeles County's geographic, environmental, and cultural diversity, the levels and types of noise issues vary significantly. The purpose of the Noise Element is to reduce and limit the exposure of the general public to excessive noise levels. The Noise Element sets the goals and policy direction for the management of noise in the unincorporated areas.

II. Background

Sound is the result of a sound source inducing vibration in the air. The vibration produces alternating bands of relatively dense and sparse particles in the air, spreading outward from the source. The result of the movement of the particles is a fluctuation in the normal atmosphere pressure, or sound waves. These waves radiate in all directions from the source and may be reflected and scattered or, like other wave actions, may turn corners. When the source stops vibrating, the sound waves disappear, almost instantaneously, and the sound ceases. The ear is extremely sensitive to sound pressure fluctuations, which are converted into auditory sensations.

Sound may be described by three variables: amplitude, frequency, and time pattern. For more information on sound descriptors, please refer to Appendix G.

Noise Measurement

Noise is often described in qualitative terms, and individuals differ greatly on what noises are considered pleasant or annoying. The community noise metrics used in the Noise Element are either Community Noise Equivalent Level (CNEL) or Day-Night Average Level (Ldn). CNEL and Ldn are the metrics used to describe annoyance due to noise and to establish land use planning criteria regarding noise.

Community Noise Equivalent Level (CNEL)

CNEL is the average equivalent A-weighted sound level during a 24-hour day that is obtained after the addition of five decibels to sound levels in the evening, from 7 p.m. to 10 p.m., and after the addition of 10 decibels to sound levels in the evening, from 10 p.m. to 7 a.m. The CNEL metric is currently used by the California Aeronautics Code for the evaluation of noise impacts at airports. Local compliance with the state airport standard requires that community noise levels be expressed in CNEL.

Day-Night Average Level (Ldn)

Ldn is the average equivalent A-weighted sound level during a 24-hour day that is obtained after the addition of 10 decibels to sound levels in the evening, after 10 p.m. and before 7 a.m. The Ldn represents a simplification of CNEL.

For more information on basic levels of noise measurement, please refer to Appendix G.

Noise Environment

The typical community noise environment is made up of background or “ambient noise,” and higher, “intrusive” levels of noise. In the unincorporated areas, the major sources of noise come from transportation systems, such as commercial and private airports, rail and bus networks, and the regional freeway and highway system. Other major sources of noise have historically been identified with industrial uses, such as manufacturing plants.

Effects of Noise

Noise by definition is unwanted sound. It is an intrusion on one’s sense of privacy. Noise can be an emotional strain and a source of great frustration when the noise is beyond a person’s control. Noise may interfere with a broad range of human activities, the overall effect of which is to cause annoyance.

The potential effects of noise on humans include the following:

- Hearing loss;
- Non-auditory physiological response;
- Communication interference;
- Performance interference;
- Sleep disturbance;
- Subjective response; and
- Community response.

Hearing Loss

Exposure to sufficient levels of noise for long periods of time can produce temporary or permanent loss of hearing. Noise levels have been identified as protective of the hearing of the general population from significant damage due to environmental noise. Environmental noise differs from workplace noise in that it is generally intermittent, covers 365 days per year rather than 250 work days, and covers 24 hours per day rather than 8 hours. Taking these factors into account, the U.S. Environmental Protection Agency (EPA) has identified an environmental noise level of Leq (24) = 70 dB to protect 96 percent of the general population from a hearing loss of greater than 5 dB at 4000 Hz.

Non-Auditory Physiological Response

Excessive exposure to noise may contribute to the development and aggravation of stress-related conditions, such as high blood pressure, coronary diseases, ulcers, colitis, and migraine headaches. EPA studies suggest the possibility of adverse health outcomes associated with environmental noise and underscore the need for additional research. Although it is reasonable to view annoyance as a symptom or sign of noise-induced stress, no direct test of this relationship has been made.

Communication Interference

The indirect effects of speech interference are:

- Disturbance of normal domestic or educational activities;

- Creation of an undesirable living environment;
- Safety hazards; and
- A source of extreme annoyance.

The appropriate noise levels to prevent outdoor speech interference (oral communication) for the outdoors, depends on the voice level and communication distance. For example, at a distance of two meters from the speaker with a normal voice (70 dB) the sound level that would allow communication with 95 percent intelligibility is 60 dB. Indoors, an Ldn of 50 dB permits virtually100 percent intelligibility. For older populations and people with hearing problems, the background noise would be lower.

High levels of noise reduce the number of conversations and their content, quality, and fidelity. Children have a relative lack of knowledge of language that makes them less able to “hear” speech when some of the cues are lost. Repeated exposure to high levels of noise in “critical periods of development” might affect conceptual development and the acquisition of speech, language, and language-related skills, such as reading and listening.

Performance Interference

In general, noise is more likely to reduce the accuracy than the total quantity of work, and it affects complex tasks more than simpler ones. As noise levels increase, both reaction times and numbers of errors increase. For some simple tasks, noise may enhance performance (when distracting cues are dropped out). Factors to consider on how noise affects work performance include: the characteristics of noise, characteristics of the task, aspects of performance considered important, and individual differences.

Noise levels most likely to be detrimental to performance are:

- Continuous noise levels above 90 dB; and
- Levels less than 90 dB, if they have predominantly high frequency components, are intermittent, unexpected, or uncontrollable.

According to the EPA, field studies demonstrate that high noise levels have been corroborated with poor performance on reading tests and auditory discrimination problems.

Sleep Disturbance

Sleep disturbance is one of the major causes of annoyance due to noise. Long-term or chronic sleep disturbance may lead to health disorders. In general, the higher the noise level, the greater the probability of a response. For example, a study found that there was a 5 percent probability of subjects being awakened by peak levels of 40 dB and a 30 percent probability at 70 dB. If the number of sound peaks increases, an individual will take longer to fall asleep, even if the average sound level decreases. However, continuous or very frequent noise throughout the night, even as high as 95 dB, appears to cause little change in the average duration of the sleep stages, since such stages are disturbed more by peaks than by high continuous levels alone.

Subjective Response

Excessive noise exposure can result in a variety of psychological responses or symptoms in an individual. The physical attributes of noise that can affect an individual’s subjective response include

apparent loudness or intensity, spectral shape, presence of discrete frequency components, abruptness or impulsiveness, intermittency, duration, and temporal variations. Other factors include the time of day, the activity interfered with, the ability to control the source and the information content, and personal factors.

Sounds of two KHz or higher are generally the most annoying and disruptive, although noises that are abrupt, intermittent, or fluctuate with time can be very annoying as well. In general, the louder the noise, the more annoying it is likely to be.

Community Response

Community response to noise is usually studied through social surveys. These studies attempt to predict, on an aggregate basis, the degree of annoyance or other effects that can be expected by the community at varying noise levels. Community response to noise is based on statistical averages, since it is known that response to noise varies greatly among individuals.

The most stable indicator of annoyance is the percentage of exposed persons who rate themselves as being highly annoyed. According to the EPA, there is a relationship between annoyance, complaints, and community reaction as a function of day-night sound levels. Approximately 17 percent of the population will be highly annoyed at an Ldn of 55 dB, and over 40 percent of the population will be highly annoyed if the Ldn exceeds 70 dB, which is the maximum safe level that the EPA has identified to protect against the risk of hearing loss. The relationship between noise and annoyance is based largely on the results of surveys around airports. These estimates have been criticized because aircraft noise is not present in many urban areas. In addition, complaints occur at a much lower rate than annoyance, and generally do not become evident until the noise levels are very high. For example, at an Ldn of 70 dB, approximately 10 percent of the population can be expected to complain, while 25 to 40 percent of the population will be annoyed.

Table 11.1 lists disturbances from excessive noise that range from minor sleep annoyance to potential hearing loss. Schools and hospitals, and other land uses that house sensitive receptors, or those at high risk of being affected by high noise levels, are considered noise-sensitive uses. In addition to the effects on human physiology and behavior, excessive noise impacts other species. For example, birds living in noisier environments tend to sing louder at night.

Table 11.1: Sources and Effects of Common Noise

dB	Effects	Observation	Source
130	Hearing loss	Pain threshold	Hard rock band Thunder
120		Deafening	
110			Jet take-off
100			Loud auto horn at 10 ft.
90		Very loud	Noisy city street
85			
80			School cafeteria

75			
70	Physiological effects	Loud	Vacuum cleaner at 10 ft.
65			
60	Interference with speech		Normal speech at 3 ft.
55			
50	Sleep interruption	Moderately loud	Average office Dishwasher in next room
45			
40	Sleep disturbance		Soft radio music Quiet residential area
35			
30		Faint	Interior of average residence
20			Average whisper at 6 ft.
10			Rustle of leaves in wind
5		Very faint	Human breathing
0	Audibility threshold		

Source: Compilation of scientific and academic literature, generated by FHWA and EPA.

Community Attitudes Toward Noise Impacts

Countywide outreach efforts for the General Plan revealed that both urban and rural communities experience neighborhood disturbances, such as barking dogs, leaf blowers, garbage trucks, buses, back-up alarms, permanent amplified noise (i.e., PA systems), and motorcycles. Urban residential areas seemed to be affected by commercial and industrial spillover noise, such as trucks making late night deliveries at neighborhood shopping centers. Virtually all communities objected to noise generated by freeways and major arterials. All communities reacted to aircraft noise to some extent, with the strongest reaction from those whose homes and businesses lie beneath the flight path of major airports.

In compliance with the County Noise Ordinance, the Los Angeles County Department of Public Health (DPH) has performed noise complaint assessments and surveys from 1996 through 1999. During this period, DPH responded to a total of 111 noise complaints under its statutory authority. It should be noted, however, that the quantification of complaints should not be used solely as a definitive expression of community response.

Regulatory Framework

The following section outlines federal, state and county noise-level standards.

Federal Regulations

The adverse impact of noise was officially recognized by the federal government in the Noise Control Act of 1972, which serves three purposes:

- Promulgating noise emission standards for interstate commerce;
- Assisting state and local abatement efforts; and
- Promoting noise education and research.

The Office of Noise Abatement and Control (ONAC) was initially tasked with implementing the Noise Control Act. However, the ONAC has since been eliminated, leaving the development of federal noise policies and programs to other federal agencies and inter-agency committees. For example, the Occupational Safety and Health Administration (OSHA) agency prohibits exposure of workers to excessive sound levels. The U.S. Department of Transportation (DOT) assumed a significant role in noise control through its various operating agencies, such as with the Federal Aviation Administration (FAA), which regulates noise generated by aircraft and airports. Surface transportation system noise is regulated by a host of agencies, including the Federal Transit Administration (FTA), which requires that all rail systems receiving federal funding be constructed and operated in accordance with its regulations and specifications. The Federal Railroad Administration (FRA) sets forth and enforces safety standards, including noise emissions within railroad locomotive cabs. Transit noise is regulated by the FTA, while freeways that are part of the interstate highway system are regulated by the Federal Highway Administration (FHWA). The FHWA has adopted and promulgated noise abatement criteria for highway construction projects. The federal government encourages local jurisdictions to use their land use regulatory authority to site new development to minimize potential noise impacts. For information on federal guidelines for acceptable environmental noise levels, please refer to Appendix G.

State Regulations

A major source of excessive noise is airports. Title 21 of the California Code of Regulations establishes the maximum acceptable level of aircraft noise in proximity to residences, schools, hospitals, and places of assembly at 65 dB CNEL. The County's Airport Land Use Plan was adopted by the Airport Land Use Commission (ALUC) in 1991 and contains noise contours based on the state standards for all public use airports within the County. Figure 11.1 shows these noise contours, and includes updated noise contour data where available. The County's Airport Land Use Plan can be found on the Los Angeles County Department of Regional Planning's web site, located at http://planning.lacounty.gov/ALUC.

Figure 11.1: Airport Noise Contours Map

Additional state regulatory codes that relate to noise abatement include:

- Uniform Building Code: Title 24 of the California Code of Regulations requires certain noise insulation measures to be used in the design of all new residential construction other than detached, single family dwellings;
- Vehicle Code: Establishes maximum noise levels for motor vehicles; and
- California Code of Regulations: Establishes maximum acceptable levels of aircraft noise.

The California Department of Health Service's Office of Noise Control (ONC), established in 1973, was instrumental in developing regulatory tools to control and abate noise for use by local agencies. One significant model is the Land Use Compatibility for Community Noise Environments Matrix, which allows a local jurisdiction to clearly delineate the compatibility of sensitive uses with various incremental levels of noise. The County has adapted this matrix to develop the County's exterior noise standards, as seen in Table 11.2.

County Regulations

The County maintains the health and welfare of its residents with respect to noise through nuisance abatement ordinances and land use planning. The County Noise Control Ordinance, Title 12 of the County Code, was adopted by the Los Angeles County Board of Supervisors in 1977 "…to control unnecessary, excessive, and annoying noise and vibration.…" It declares that the purpose of the County policy is to "…maintain quiet in those areas which exhibit low noise levels and to implement programs aimed at reducing noise in those areas within the county where noise levels are above acceptable values." (Section 12.08.010 of the County Code).

On August 14, 2001, the Board of Supervisors approved an ordinance amending Title 12 of the County Code to prohibit loud, unnecessary, and unusual noise that disturbs the peace and/or quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitivity residing in the area. Regulations can include requirements for sound barriers, mitigation measures to reduce excessive noise, or the placement and orientation of buildings, and can specify the compatibility of different uses with varying noise levels, as shown in Table 11.2. For more information on noise barrier strategies, please see Appendix G.

Table 11.2: Los Angeles County Community Noise Criteria

			Level (dBA)				
Noise Zone	**Land Use of Receptor Property**	**Time**	**Std 1L5030 min/hr**	**Std 2L2515 min/hr**	**Std 3L8.35 min/hr**	**Std 4L1.71 min/hr**	**Std 5L0 at no time**
I	Noise Sensitive	Anytime	45	50	55	60	65
II	Residential	10PM to 7AM	45	50	55	60	65
		7AM to 10PM	50	55	60	65	70
III	Commercial	10PM to 7AM	55	60	65	70	75
		7AM to 10PM	60	65	70	75	80
IV	Industrial	Anytime	70	75	80	85	90

Source: Section 12.08.390 of the Los Angeles County Code (a portion of the Noise Control Ordinance)

Noise Levels

Table 11.3 provides the current and projected noise levels for major sources of noise in the unincorporated areas.

Table 11.3: Current and Projected Noise Levels for Major Sources

Source	Current	Projected
Highways and Freeways	TBD	TBD
Primary Arterials and Major Local Streets	TBD	TBD
Online Railroad Operations and Ground Rapid Transit Systems	TBD	TBD
Airport Operations	TBD	TBD
Industrial Plants	TBD	TBD

Figure 11.2 shows the noise contours for major sources of noise.

Figure 11.2: Noise Contours Map

III. Issues

Reducing Noise Impacts Through Planning

Since excessive noise affects quality of life, existing and future noise levels must be considered when making land use planning decisions to minimize exposure to excessive noise. Noise-sensitive uses, such as residences, hospitals, schools, childcare facilities, and places of assembly are especially vulnerable to excessive noises generated by the airports, rail, freeways and primary arterials, heavy industry and warehousing facilities. As stated in the noise policies, planning for these noise-sensitive uses must include sufficient spatial separation or site design and construction to ensure compatibility with noise-generating uses.

Coordinated transportation and land use planning plays a critical role in the prevention and mitigation of excessive noise impacts. Federal and state laws, in many instances, preempt local laws from controlling certain sources by setting noise levels and operational procedures for aircraft, motor vehicles, and interstate carriers. Local governments can, whenever they have jurisdictional authority, address these noise problems through a combination of land use planning, building code and zoning regulations, and other policies where a noise abatement program is required.

As specified in Policy N 1.12, decisions on land adjacent to transportation facilities, such as the airports, freeways and other major highways, must consider both existing and future noise levels of these transportation facilities to assure the compatibility of proposed uses.

In addition, the condition of road surfaces and traffic congestion can contribute to vehicle noise. Local roadway design features, traffic management, and traffic calming techniques can minimize noise from traffic speed and frequent vehicle acceleration and deceleration, while innovative roadway paving material can further reduce traffic noise.

IV. Goals and Policies

Goal N 1: The reduction of excessive noise impacts.	
Topic	**Policy**
Reducing Noise Impacts	Policy N 1.1: Utilize land uses to buffer noise-sensitive uses from sources of adverse noise impacts.
	Policy N 1.2: Reduce exposure to noise impacts by promoting land use compatibility.
	Policy N 1.3: Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through Best Available Technologies.
	Policy N 1.4: Enhance and promote noise abatement programs in an effort to maintain acceptable levels of noise as defined by the Los Angeles County Exterior Noise Standards and other applicable noise standards.
	Policy N 1.5: Ensure compliance with the jurisdictions of State Noise Insulation Standards (Title 24, California Code of Regulations and Chapter 35 of the Uniform Building Code), such as noise insulation of new multifamily dwellings constructed within the 60 dB (CNEL or Ldn) noise exposure contours.
	Policy N 1.6: Ensure cumulative impacts related to noise do not exceed health-based safety margins.
	Policy N 1.7: Utilize traffic management and noise suppression techniques to minimize noise from traffic and transportation systems.
	Policy N 1.8: Minimize noise impacts to pedestrians and transit-riders in the design of transportation facilities and mobility networks.
	Policy N 1.9: Require construction of suitable noise attenuation barriers on noise sensitive uses that would be exposed to exterior noise levels of 65 dBA CNEL and above, when unavoidable impacts are identified.
	Policy N 1.10: Orient residential units away from major noise sources (in conjunction with applicable building codes). Where feasible, exterior walls should have minimal surface openings (i.e.,windows, balconies, sliding doors, etc.) not to exceed 10% of the total wall surface.
	Policy N 1.11: Maximize buffer distances and design and orient sensitive receptor structures (hospitals, residential, etc.) to prevent noise and vibration transfer from commercial/light industrial uses.
	Policy N 1.12: Decisions on land adjacent to transportation facilities, such as the airports, freeways and other major highways, must consider both existing and future noise levels of these transportation facilities to assure the compatibility of proposed uses.

V. Noise Element Implementation Program

- Countywide Noise Assessment Survey/County Noise Ordinance Update
- Countywide Noise Mapping
- Noise Abatement Program

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

Chapter 12: Safety Element

I. Introduction

Development in Los Angeles County has extended into areas with environmental hazards, such as hillsides, floodplains, and seismic areas. If this pattern of growth continues, it will further increase the vulnerability of County residents to seismic, geotechnical, flood, and fire hazards. In addition, studies suggest that climate change will increase the risk of natural hazards, particularly related to wildland fires and flooding.

The purpose of the Safety Element is to reduce the potential risk of death, injuries, and economic damage resulting from natural and man-made hazards. The California Government Code requires the General Plan to address "the protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence, liquefaction, and other seismic hazards...; flooding; and wildland and urban fires." The Safety Element addresses only limited aspects of man-made disasters, such as hazardous waste and materials management, in particular, those aspects related to seismic events, fires, and floods. In general, hazardous materials management is addressed in the Los Angeles County Integrated Waste Management Plan (California Code of Regulations (CCR) Section 18755.5).

The Safety Element works in conjunction with the All-Hazard Mitigation Plan prepared by the Chief Executive Office-Office of Emergency Management (CEO OEM), which sets strategies for natural and man-made hazards in Los Angeles County. The All-Hazard Mitigation Plan, which has been approved by the Federal Emergency Management Agency (FEMA) and the California Emergency Management Agency (CalEMA), includes a compilation of known and projected hazards in Los Angeles County. The All-Hazard Mitigation Plan also includes information on historical disasters in Los Angeles County. For more information on the County All-Hazard Mitigation Plan, please visit the CEO web site at http://lacoa.org/hazmit.htm.

II. Seismic and Geotechnical Hazards

Background

Since 1800, over 90 significant earthquakes have jolted the Los Angeles region. There are over 50 active and potentially active fault segments, an undetermined number of buried faults, and at least four blind thrust faults capable of producing damaging earthquakes in Los Angeles County.

The California Alquist-Priolo Earthquake Fault Zoning Act of 1972 and Section 113 of the County Building Code prohibits the location of most structures for human occupancy across the traces of active faults, and lessens the impacts of fault rupture. In addition, the California Seismic Hazards Mapping Act of 1990 regulates developments as defined by the Act. Seismic Hazard Zone Maps depict areas where earthquake induced liquefaction or landslides have historically occurred, or where there is a high potential for such occurrences. Liquefaction is a process by which water saturated granular soils transform from a solid to a liquid state during strong ground shaking. A landsliding is a general term for a falling, sliding or flowing mass of soil, rocks, water and debris.

The main provisions of the Alquist-Priolo Earthquake Fault Zoning and Seismic Hazard Mapping Acts are to:

- Require the California Geological Survey to prepare maps depicting earthquake fault zones, liquefaction hazard zones and earthquake-induced landslide zones.
- Require property owners (or their real estate agents) to disclose that their property lies within identified hazard zones; and
- Prohibit new construction of projects within identified hazard zones until a comprehensive geotechnical study has been completed.

Figure 12.1 identifies the County's Seismic Hazard Zones. In addition to depicting faults within Alquist-Priolo Earthquake Fault Zones, Figure 12.1 also depicts faults that are considered active based on published and unpublished information. For more details on active faults in Los Angeles County, please refer to Appendix H.

Figure 12.1: Seismic and Geotechnical Hazard Zones Policy Map

Issues

1. Seismic Hazards

Earthquakes can cause ground rupture, liquefaction and landsliding. In addition, flooding in low-lying coastal areas can result from a tsunami that is generated by a large offshore earthquake or sub-marine landslides. Widespread and localized earthquake induced effects place structures or utility corridors at-risk, and if damaged, can result in fires, failure of large dams, or the release of toxic, flammable, or explosive materials. The General Plan prohibits new projects, as defined by the Alquist-Priolo Act and Seismic Hazards Mapping Acts, until a comprehensive geotechnical study has been completed.

2. Geotechnical Hazards

More than 50 percent of the unincorporated areas are comprised of hilly or mountainous terrain. The vast majority of hillside hazards include mud and debris flows, active deep seated landslides, hillside erosion, and man-induced slope instability. These geotechnical hazards include artificially-saturated or rainfall-saturated slopes, the erosion and undercutting of slopes, earthquake induced rock falls and shallow failures, and natural or artificial compaction of unstable ground. The County's Hillside Management Area Ordinance regulates development in hillsides that have natural slope gradients of 25 percent or steeper to address these potential hazards.

Goals and Policies for Seismic and Geotechnical Hazards

Goal S 1: An effective regulatory system that prevents or minimizes personal injury, loss of life and property damage due to seismic and geotechnical hazards.	
Topic	**Policy**
Geotechnical Hazards	Policy S 1.1: Discourage development in Seismic Hazard and Alquist-Priolo Earthquake Fault Zones.
	Policy S 1.2: Prohibit the construction of most structures for human occupancy adjacent to active faults until a comprehensive geotechnical study that addresses the potential for fault rupture has been completed.
	Policy S 1.3: Require developments to mitigate geotechnical hazards, such as soil instability and landsliding, in Hillside Management Areas through siting and development standards.
	Policy S 1.4: Support the retrofitting of unreinforced masonry structures to help reduce the risk of structural and human loss due to seismic hazards.

III. Flood and Inundation Hazards

Background

Federal, state, and local agencies share and coordinate responsibilities for flood protection in Los Angeles County. The two main federal agencies include the U.S. Army Corps of Engineers, which implements federal flood protection policies, and the Federal Emergency Management Agency (FEMA). The California Department of Water Resources (DWR) is responsible for managing the state's waterways. Locally, the Los Angeles County Department of Public Works (DPW) and the Los Angeles County Flood Control District work to reduce flood risk in Los Angeles County. One way in which DPW and the Flood Control District manage flood risk is through the development of the Sediment Management Strategic Plan. For more information on the Sediment Management Strategic Plan, please visit http://dpw.lacounty.gov/lacfcd/sediment/Default.asp.

For a comprehensive list of agencies responsible for flood management, protection, as well as financial assistance, please refer to Appendix H.

Flood Hazard Zones

Flood Hazard Zones are areas subject to moderate or minimal flood hazards that are identified on an official Flood Insurance Rate Map issued by the FEMA. Flooding in Los Angeles County can be earthquake induced or can result from intense rainfall. Figure 12.2 shows the County's Flood Hazard Zones, which are 100-year and 500-year floodplains designated by FEMA.

In addition to the Flood Hazard Zones, DWR's Awareness Floodplain Mapping Program identifies potential flood hazard areas that are not part of the regulated floodplain. For the available awareness floodplain maps for the unincorporated areas, please refer to Appendix H.

Figure 12.2: Flood Hazard Zones Policy Map

Since 1980, the County has been a voluntary participant in the FEMA National Flood Insurance Program (NFIP). As a participant, the County is responsible for regulating development in Flood Hazard Zones and planning for floodplain management activities that promote and encourage the preservation and restoration of the natural state of the floodplain. As a compliance requirement of the NFIP, the County enforces regulations to ensure that buildings are erected at a safe elevation and to prevent potential damage to properties.

The County provides information on Flood Hazard Zones from FEMA's Flood Insurance Rate Maps to property owners for use in resolving flood insurance matters with insurance companies and lending institutions. The County conducts educational outreach to communities in the unincorporated areas on how to mitigate flooding impacts on properties. Through these and other efforts, the County reduces flood insurance costs for residents who are required to purchase flood insurance by lowering a community's overall rating system number.

For more information on flood hazards, please visit the DPW web site at http://dpw.lacounty.gov/wmd/nfip. Please also visit the U.S. Army Corps of Engineers National Levee Database at http://nld.usace.army.mi.

Issues

Flood Hazards and the Impacts of Climate Change

Large sub-marine landslides have the potential to generate destructive tsunamis along adjacent coastal areas in Southern California. The travel time for a locally generated tsunami, from initiation at the source to arrival at coastal communities, can be 5 to 30 minutes.

The likelihood for the catastrophic inundation of low-lying coastal areas as a result of a tsunami is low. However, the risk of losing vital commerce associated with the ports of Los Angeles and Long Beach warrants adequate risk reduction measures from tsunamis. The ports of Los Angeles and Long Beach have completed a Tsunami Hazard Assessment to guide disaster planning and mitigate damage from a potential tsunami at their facilities. In addition, the County All Hazards Mitigation Plan includes risk reduction measures for the coastal areas. For more information, please refer to the County Local All Hazards Mitigation Plan, which can be accessed on the CEO web site at http://lacoa.org/hazmit.htm.

Figure 12.3 identifies the County's Tsunami Hazard Areas, which include Marina Del Rey and portions of the Santa Monica Mountains Coastal Zone.

Figure 12.3: Tsunami Hazard Areas Map

The inundation of water caused by a catastrophic dam or aqueduct failure can devastate large areas and threaten residences and businesses. There are 103 dams in Los Angeles County that hold billions of gallons of water in reservoirs, and seismic activity can compromise dam structures and result in catastrophic flooding. Since 1928, two dam failures and one near failure have occurred in the County. Frequently occurring, intense storm events have also caused mudflow and flood hazards, which have led to the destruction of property, injuries, and deaths. Figure 12.4 identifies the County’s Dam and Reservoir Inundation Routes.

Figure 12.4: Dam and Reservoir Inundation Routes Map

Climate change is expected to produce longer and more severe droughts due to higher average temperatures, as well as greater and more frequent floods. The water systems in Los Angeles County are designed to balance flood protection during the winter and spring months with water storage during the dry months. Increased rainfall and an earlier melting of the snowpack could result in overburdened facilities that cannot adequately protect communities from floods. In addition, consideration needs to be made for floods caused by sea level rise. Figure 12.5 shows the areas along the coastline that can potentially be impacted due to sea level rise flooding. While these impacts are likely to occur over a long period of time, sea level rise can affect and alter the impacts of flood inundation of low-lying coastal areas. Impacts related to sea level rise include the flooding of septic systems and the intrusion of salt water into the fresh water supply. Although coastal habitats can adapt to gradual changes in sea level, an accelerated rise in sea level will negatively impact coastal habitats. Wetlands, in particular, are at-risk of being inundated.

Figure 12.5: Sea Level Rise Impact Areas Map

Goals and Policies for Flood and Inundation Hazards

Goal S 2: An effective regulatory system that prevents or minimizes personal injury, loss of life, and property damage due to flood and inundation hazards.	
Topic	**Policy**
Flood Hazards	Policy S 2.1: Discourage development in the County's Flood Hazard Zones.
	Policy S 2.2: Discourage development from locating in dam and reservoir inundation routes.
	Policy S 2.3: Discourage development from locating downslope from aqueducts.
	Policy S 2.4: Consider climate change implications in planning for flood and inundation hazards.
	Policy S 2.5: Ensure that developments located within the County's Flood Hazard Zones are sited and designed to avoid isolation from essential services and facilities in the event of flooding.
	Policy S 2.6: Ensure that the mitigation of flood related property damage and loss does not impact biological and other resources.
	Policy S 2.7: Work cooperatively with public agencies with responsibility for flood protection, and with stakeholders in planning for flood and inundation hazards.
	Policy S 2.8: Locate essential public facilities, such as hospitals and fire stations, outside of Flood Hazard Zones, where feasible.

IV. Fire Hazards

Background

Fire Hazard Severity Zones

Los Angeles County faces major wildland fire threats due to its hilly terrain, dry weather conditions and the nature of its plant coverage. The at-risk areas are designated as Fire Hazard Severity Zones (FHSZs) per Government Code Sections 51175 – 51189. FHSZs in the unincorporated areas are classified as Very High, High, and Moderate in State Responsibility Areas and Very High in Local and Federal Responsibility Areas. The Forestry Division of the Los Angeles County Fire Department (Fire Department) designates the VHFSZs in the local responsibility areas.

In an effort to reduce the threats to lives and property, the Fire Department has instituted a variety of regulatory programs and standards for vegetation management, pre-fire management and planning, fuel modification, and brush clearance. In addition to these programs, the Fire Department and DPW enforce fire and building codes related to development in VHFHSZs. The Fire Department has access requirements for single family residential uses built in VHFHSZs. Access requirements for all other uses built within VHFHSZs are determined on a case-by-case basis.

Figure 12.6 identifies the County's FHSZs. For more information on the County's fire prevention and safety programs, please visit the Los Angeles County Fire Department's web site at http://fire.lacounty.gov.

Figure 12.6: Fire Hazard Severity Zones Policy Map

California Fire Plan

The State Board of Forestry and the California Department of Forestry and Fire Protection (CDF) have drafted a comprehensive document for wildland fire protection in California. The Fire Department Forestry Division's Fire Plan Unit is in charge of implementing the California Fire Plan in Los Angeles County. The planning process defines a level of service measurement, considers assets at risk, incorporates the cooperative inter-dependent relationships of wildland fire protection providers, provides for public stakeholder involvement, and creates a fiscal framework for policy analysis. The Fire Department is one of six contract counties that maintain a contractual relationship with CDF and implements the California Fire Plan within Los Angeles County through the Strategic Fire Plan. The Strategic Fire Plan prepared by the Fire Department identifies and prioritizes pre- and post-fire management strategies and tactics to reduce loss of life, property, and natural resources. The plan is updated annually. This Safety Element incorporates the Strategic Fire Plan by reference and as amended annually. For more information, please visit the following web site: http://fire.lacounty.gov/forestry/.

Regulations

Fuel Modification

Fuel modification plans are required for projects within areas designated as a Fire Hazard Severity Zone within the State Responsibility Areas or Very High Hazard Severity Zone within the Local Responsibility areas, as described in Title 32, Fire, Section 4908. The fuel modification plan identifies specific zones within a property that is subject to fuel modification. A fuel modification zone is a strip of land where combustible native or ornamental vegetation has been modified and/or

partially or totally replaced with drought-tolerant, low-fuel-volume plants. The County of Los Angeles Fuel Modification Guidelines can be found at http://fire.lacounty.gov/Forestry/.

Table 12.1 reference fire-related land use and building regulations, including fuel modification, in the Los Angeles County Code.

Table 12.1. Fire-Related Land Use and Building Regulations in the Los Angeles County Code

Reference	Summary
Title 32, Fire, Section 4907.1	Fuel modification
Title 20, Utilities, Section 20.16.060	Fire flow and fire hydrant requirements, including in Very High Fire Hazard Severity Zones.
Title 21, Subdivisions, Chapter 21.24, Part 1	Access road requirements for fire equipment access and public evacuation.
Title 21, Subdivisions, Section 21.44.250	Storm drain, sewer, or fire access easement designations on subdivision maps.
Title 21, Subdivisions, Section 21.24.220	Fire-protection access easements
Title 26, Building, Chapter 7A	Buildings within a Wildland-Urban Interface Fire Area.
Title 32, Fire, Section 105.7.9.1	Fire Department approval for land development projects.

Conservation and Open Space

Significant Ecological Areas and Oak Woodlands.

Many of areas that contain biological resources in the unincorporated areas, including those within Significant Ecological Areas (SEAs) and Coastal Resource Areas (CRAs), and oak woodlands, overlap with fire hazard areas. The Fire Department Strategic Fire Plan establishes goals and policies for incorporating systematic fire improvements for open space.

The Conservation and Natural Resources Element includes goals and policies and maps for SEAs and CRAs, as well as a map of SEAs and CRAs. In addition, as described in the Conservation and Natural Resources Element, DRP will document the County's oak woodlands as part of the implementation of the Oak Woodlands Conservation Management Plan.

Vegetation Management

Vegetation management, as it relates to wildland fire, refers to the total or partial removal of high fire hazard grasses, shrubs, or trees. This includes thinning to reduce the amount of fuel and modification of vegetation arrangement and distribution to disrupt fire progress. In addition to fire hazard reduction, vegetation management has other benefits. These include increased water yields, improved habitat for wildlife, reduction of invasive exotic plant species, and open access for recreational purposes.

The Vegetation Management Program (VMP) is a cost-sharing program that focuses on the use of prescribed fire, hand crews, mechanical, biological and chemical means, for addressing wildland fire fuel hazards, habitat restoration and other resource management issues on State Responsibility Area (SRA) and Local Responsibility Area (LRA) lands.

VMP allows private landowners to enter into a contract with Cal Fire to use an integrated vegetation management plan to accomplish a combination of fire protection and resource management goals. The Los Angeles County Fire Department Forestry Division's Vegetation Management Unit and the Air and Wildland Division's Prescribed Fire Office implement the VMP projects.

Circulation and Access

The Fire Department Strategic Fire Plan includes a list of existing Fire Department helispots, water resources, Motorway Maintenance Map, and a description of the road and fuel maintenance functions of the Fire Department and DPW. Section 503 of Title 32 provides additional specifications for fire access roads, including dimensions and markings.

Issues

1. The Increasing Costs of Wildland Fires

Although fires are a natural part of the wildland ecosystem, development in wildland areas increases the danger of wildfires to residents, property, and the environment. Increased fire frequency is the primary threat to wildland ecosystems, which are adapted to an average fire return interval of 60 to 150 years. More frequent fires cause habitat type conversion and the presence of invasive species.

Wildland fire threats are increasing, in part due to climate change. The rise in temperature and prolonged periods of drought increase the frequency and duration of wildfires. Wildfires also have negative impacts on air quality. As exposure to smoke and particulate matter has immediate and long-term public health impacts, populations may suffer from eye irritations, respiratory problems, and complications to existing lung and heart conditions. Wildfires also have major economic impacts and cost the County millions of dollars every year.

Although multiple regulations are in place to ensure that adequate infrastructure, such as peak load water supplies and necessary disaster routes are incorporated into new developments, older communities with aging and substandard infrastructure may face greater risks from wildland fires. In addition, current regulations cannot ensure that all developments that locate in VHFHSZs are protected from wildland fire threats.

For a timeline of recent fires and their countywide impacts, as well as their impacts on the unincorporated areas, please refer to Appendix H.

2. Urban Fire Considerations

Due to the intensity of development, the number of potentially affected populations, and the difficulties of containment, the County must also devote major resources to controlling potential fire hazards in its urbanized areas. Fire safety and suppression are especially critical in industrial areas and highrise buildings. The County must also consider performance standards and use exemptions that minimize urban fire risks, such as regulating certain commercial uses that have high fire risks in mixed use developments.

3. Fire Prevention, Response and Recovery

This section references the relevant County codes, as well as programs and functions of the Fire Department and other agencies in fire prevention, fire/emergency response and recovery as required by the CDF. Additional information can be found in the Strategic Fire Plan, which is updated annually.

Goals and Policies for Fire Hazards

Goal S 3: An effective regulatory system that prevents or minimizes personal injury, loss of life, and property damage due to fire hazards.	
Topic	**Policy**
Fire Hazards	Policy S 3.1: Discourage development in VHFHSZs, particularly in areas with significant biological resources.
	Policy S 3.2: Consider climate change implications in planning for VHFHSZs.
	Policy S 3.3: Ensure that the mitigation of fire related property damage and loss in VHFHSZs limits impacts to biological and other resources.
	Policy S 3.4: Reduce the risk of wildland fire hazards through the use of regulations and performance standards, such as fire resistant building materials and vegetation.
	Policy S 3.5: Encourage the use of fire resistant vegetation that is compatible with the area's natural vegetative habitats in fuel modification activities.
	Policy S 3.6: Ensure adequate infrastructure, including ingress, egress, and peak load water supply availability for all projects located in VHFHSZs.
	Policy S 3.7: Consider siting and design for developments located within VHFHSZs, particularly in areas located near ridgelines and on hilltops, to reduce the wildfire risk.
	Policy S 3.8: Support the retrofitting of existing structures in VHFHSZs to help reduce the risk of structural and human loss due to wildfire.
	Policy S 3.9: Adopt by reference the County of Los Angeles Fire Department Strategic Fire Plan, as amended.
	Policy S 3.10: Map oak woodlands in Los Angeles County as part of implementation of an Oak Woodlands Conservation Management Plan.

V. Emergency Response

Background

Disaster Response

Figure 12.7 shows the County's disaster routes. For more information on disaster response, please refer to the County Local All Hazards Mitigation Plan, which can be accessed on the CEO web site at http://lacoa.org/hazmit.htm.

Figure 12.7: Disaster Routes Map

Emergency Responders

Office of Emergency Management (OEM)

The Office of Emergency Management is responsible for organizing and directing the preparedness efforts of the Emergency Management Organization of Los Angeles County. The OEM is the day-to-day Los Angeles County Operational Area coordinator for the County. The emergency response plan for the unincorporated areas is the Operational Area Emergency Response Plan (OAERP), which is prepared by OEM. The OAERP strengthens short and long-term emergency response and recovery capability, and identifies emergency procedures and emergency management routes in the County.

To access the OAERP, and to find more information on the OEM, please visit the CEO's web site at http://lacoa.org.

Los Angeles County Fire Department

The Fire Department provides fire, safety, and emergency medical services to the unincorporated areas. Additionally, many cities within Los Angeles County utilize Fire Department services. There are three major geographic regions in the Fire Department service area, which are divided into nine divisions and 22 battalions, as seen in Figure 12.8.

Figure 12.8: Fire Department Battalions and Stations Map

The Fire Department operates multiple divisions including Air and Wildland, Fire Prevention, and Forestry. In addition, the Health Hazardous Materials Division's mission is to "protect the public health and the environment...from accidental releases and improper handling, storage, transportation, and disposal of hazardous materials and wastes through coordinated efforts of inspections, emergency response, enforcement, and site mitigation oversight."

The Fire Department is a special district and receives most of its revenue from the unincorporated areas from a portion of the ad valorem property tax paid by the owners of all taxable properties. This revenue source varies from one tax rate area to another, and is specifically earmarked for the Fire Department. The Fire Department's Special Tax, which was approved by voters in 1997, is a supplemental revenue source that pays for essential fire suppression and emergency medical services. In addition, in 1990, the Board of Supervisors adopted a Los Angeles County Developer Fee Program to fund the acquisition, construction, improvement, and equipping of fire station facilities in the high growth areas of the unincorporated areas.

For more information on the Fire Department's programs and divisions, please visit their web site at http://fire.lacounty.gov.

Los Angeles County Sheriff's Department

The Los Angeles County Sheriff's Department (LASD) is the largest sheriff's department in the world. In addition to specialized services, the LASD is divided into 10 divisions, including the Office of Homeland Security, which focuses on potential threats related to local homeland security issues, such as terrorism or bioterrorism. The LASD provides law enforcement services to more than one million people living within 90 unincorporated communities, as well as to more than four million residents living within 40 contract cities. In addition, LASD provides law enforcement services to nine community colleges, Metro, and 48 Superior Courts. In addition to proactive enforcement of criminal laws, the LASD also provides investigative, traffic enforcement, accident investigation, and community education functions.

The LASD budget is approved by the Board of Supervisors through the utilization of state and local tax dollars. These funds are augmented by revenue generating contracts and grant allowances.

The passage of tax limitation measures, decline in the popular support for bond measures, and reductions in state and federal assistance, has hampered the capability of local governments to fund public safety. The LASD partnered with the City of Santa Clarita and the Board of Supervisors to establish the Law Enforcement Facilities Fee. The Law Enforcement Facilities Fee is a fee program that applies to certain projects in the Santa Clarita Valley and aims to mitigate project impacts on law enforcement service and facilities.

Figure 12.9 identifies the location of LASD's service areas. The Field Operation Regions are centered on 25 patrol stations that are dispersed throughout Los Angeles County.

For the location and detailed information of each station, and further information on the LASD Office of Homeland Security, please visit the LASD web site at http://www.lasd.org.

Figure 12.9: Sheriff's Department Service Areas Map

Cross-Jurisdictional Emergency Response

In emergency services, mutual aid is an agreement among emergency responders to lend assistance across jurisdictional boundaries. This may occur due to an emergency response that exceeds local resources, such as a disaster or a multiple-alarm fire. Mutual aid may be ad hoc, requested only when such an emergency occurs. It may also be a formal standing agreement for cooperative emergency management on a continuing basis, such as ensuring that resources are dispatched from the nearest fire station, regardless of which side of the jurisdictional boundary the incident is on. Agreements that send closest resources are regularly referred to as "automatic aid agreements." Current agreements are:

- Los Angeles County Operational Area Mutual Aid Plan
- California Fire Master Mutual Aid Agreement
- California Master Cooperative Wildland Fire Management (CFMA) and Stafford Act Response Agreement
- California Fire Assistance Agreement

Los Angeles Regional Interoperable Communication System (LA-RICS)

The Los Angeles region's first responders currently use a patchwork of often incompatible radio technologies and frequencies. This uncoordinated system means that neighboring agencies and systems cannot easily communicate with one another.

The Los Angeles Regional Interoperable Communication System (LA-RICS) is a modern, integrated wireless voice and data communication system designed and built to serve law enforcement, fire service and health service professionals throughout Los Angeles County. The new system will provide day-to-day communications within agencies and allow seamless interagency communications for responding to routine, emergency and catastrophic events. LA-RICS will replace the patchwork system with a single countywide network, improve overall traffic capacity and coverage, and provide a dedicated broadband network for first responders. More information about LA-RICs is available at http://www.la-rics.org/.

Homeland Security

The Fire Department's Homeland Security/Hazardous Materials Section was created in 1995 in response to Presidential Decision Directive 39, outlining the need for the Fire Department to plan, organize and direct its members in preparing and responding to any large scale terrorist incident in the Los Angeles County Operational Area.

The Homeland Security Section was born out of necessity in response to the community's concerns that emergency responders need to be fully equipped and trained to deal with a chemical, biological, radiological, nuclear or explosive event. Today, all County firefighters and other emergency responders have the necessary personnel protective equipment and the training to respond safely and effectively to an event of this type.

Issues

1. The Need for Adequate Emergency Response Services

A catastrophic natural or man-made disaster has the potential to severely strain the emergency response and recovery capabilities of federal, state and local governments, and profoundly impact the regional and state economy. It is imperative that there are adequate resources available for emergency response. For example, to effectively and efficiently fulfill all of its functions, the Fire Department requires a staff level of one deputy sheriff per each 1,000 population.

Effective emergency response requires that the County provide public alerts and warnings for disasters. In addition, there is a need for preparedness communications about threats that face communities throughout Los Angeles County.

2. Creating Efficiencies Through Collaboration and Coordination

Continued growth and development in Los Angeles County will significantly affect the Fire Department and LASD operations. Coordination among various County departments is necessary to ensure adequate emergency response. Collaboration can also ensure that development occurs at a rate that keeps pace with service needs. In order to maintain an adequate emergency response system, it is important for the County to discourage development in hazardous areas, including Very High Fire Hazard Severity Zones, Flood Hazard Zones, and Seismic and Geotechnical Hazard Zones.

Goals and Policies for Emergency Response

Goal S 4: Effective County emergency response management capabilities.	
Topic	**Policy**
Emergency Response	Policy S 4.1: Ensure that residents are protected from the public health consequences of natural or man-made disasters through increased readiness and response capabilities, risk communication, and the dissemination of public information.
	Policy S 4.2: Support County emergency providers in reaching their response time goals.
	Policy S 4.3: Coordinate with other County and public agencies, such as transportation agencies, and health care providers on emergency planning and response activities, and evacuation planning.
	Policy S 4.4: Encourage the improvement of hazard prediction and early warning capabilities.
	Policy S 4.5: Ensure that there are adequate resources, such as sheriff and fire services, for emergency response.
	Policy S 4.6: Ensure that essential public facilities are maintained during natural disasters, such as flooding.

VI. Safety Element Implementation Programs

- Wildland Fire Hazards Ordinance
- Debris Management Plan
- At-Risk Properties Hazard Fund and Strategies
- Floodplain Management Plan Implementation and Update

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Boxes]

Wildland Fires and Climate Change

Recent studies indicate that the changing climate has resulted in wildland fires that last longer and occur more frequently. In 2007 and 2008 alone, wildland fires burned over 147,000 acres, destroyed 570 residences, and damaged an additional 42 residences in the unincorporated areas. In 2009, the Station Fire broke out in the Angeles National Forest, which burned nearly 160,000 acres and destroyed approximately 76 residences. This fire, the largest in County recorded history, occurred months before the Santa Ana winds, which often exacerbate wildland fires in the fall and spring months.

Wildfire Preparedness Programs and Evacuation Guides

The following are guidelines for wildfire readiness for a variety of development and occupancy types:

County of Los Angeles Fire Department "Ready, Set, Go" Program

Santa Monica Mountains Fire Safe Alliance, "A Road Map to Fire Safety"

For more information, please visit the Fire Department web site at http://www.fire.lacounty.gov.

Community Wildfire Protection Plans

Community Wildfire Protection Plans are community-based collaborative plans developed by local stakeholders that identify and prioritize areas for hazardous fuel reduction treatments to protect natural resources, communities and infrastructure from wildfire. Applicable local governments, local fire departments, state forestry, and federal land management agencies agree to the plans. The County of Los Angeles Fire Department's Fire Plan Unit provides fire hazard reduction project design, development, planning and implementation for communities in Los Angeles County. Los Angeles County CWPPs include the following:

Santa Monica Mountains Community Wildfire Protection Plan:
http://fire.lacounty.gov/forestry/PDF/SMM_CWPP_02MAY2012_FINAL_v3.pdf

Community Emergency Response Team (CERT) Program

The Community Emergency Response Team (CERT) Program educates people about disaster preparedness for hazards that may impact their area, and trains them in basic disaster response skills, such as fire safety, light search and rescue, team organization, and disaster medical operations. Using the training learned in the classroom and during exercises, CERT volunteers can assist others in their neighborhood or workplace following an event when professional responders are not immediately available to help. CERT members are also encouraged to support emergency response agencies by taking a more active role in emergency preparedness projects in their community.

For more information on the CERT Program, please visit the Fire Department web site at
http://www.fire.lacounty.gov/ProgramsEvents/PECERT.asp.

Chapter 13: Public Services and Facilities Element

I. Introduction

As Los Angeles County continues to grow, the demand for public facilities and infrastructure will increase. This Element provides a summary of some of the major public services and facilities that serve the unincorporated areas, and establishes policies that guide the provision of public services and facilities in conjunction with projected growth.

The Public Services and Facilities Element promotes the orderly and efficient planning of public facilities and infrastructure in conjunction with land use development and growth. This Element focuses on services and facilities that are affected the most by growth and development: Drinking Water; Sanitary Sewers; Solid Waste; Utilities; Early Care and Education; and Libraries. The Element also discusses the key role of collaboration among County agencies in efficient and effective service provision and facilities planning.

This Element works in conjunction with the Los Angeles County Department of Public Works (DPW) Strategic Plan, which outlines service delivery goals for sanitary sewer, water supply, flood control, water quality, garbage disposal, and traffic lighting; Integrated Waste Management Plan; Sewer System Management Plan; Library Strategic Plan; and other plans to address the provision of public services and facilities to the unincorporated areas.

II. Effective Service and Facilities Planning and Maintenance

Background

There are special development fees and legal requirements in place to address the provision of services or facilities and infrastructure, including school facilities fees, sewer connection mitigation fees, fire protection facilities fees, library facilities mitigation fees, and water supply assessments for large projects.

Issues

1. Development Fees

Many existing public facilities are operating at full capacity or are overburdened. In addition, many development fees and legal requirements that are intended to pay for infrastructure and services only apply to certain developments, such as subdivisions and projects that exceed a certain size threshold.

2. The Need to Effectively Track Development

In addition to fees, a comprehensive system is necessary to effectively track planned development and corresponding infrastructure and service needs. Furthermore, without adequate investment from the public sector to maintain and upgrade existing infrastructure, the costs of infrastructure improvements could make a project financially infeasible. Coordination among various County departments ensures that infrastructure is upgraded, as well as expanded in areas, such as Transit Oriented Districts (TODs), where General Plan encourages development.

Goals and Policies for Effective Service and Facilities Planning and Maintenance

Goal PS/F 1: A coordinated, reliable, and equitable network of public facilities that preserves resources, ensures public health and safety, and keeps pace with planned development.	
Topic	**Policy**
Sufficient Infrastructure	Policy PS/F 1.1: Discourage development in areas without adequate public services and facilities.
	Policy PS/F 1.2: Ensure that adequate services and facilities are provided in conjunction with development through phasing or other mechanisms.
	Policy PS/F 1.3: Ensure coordinated service provision through collaboration between County departments and service providers.
	Policy PS/F 1.4: Ensure the adequate maintenance of infrastructure.
	Policy PS/F 1.5: Focus infrastructure investment, maintenance and expansion efforts where the General Plan encourages growth, such as TODs.
	Policy PS/F 1.6: Support multi-faceted public facility expansion efforts, such as substations, mobile units, and satellite offices.

III. Drinking Water

Background

The County provides a continuous supply of clean water for everyday uses through a complex water management system, which consists of numerous water providers, water control boards and other agencies. A combination of local and imported water supplies is delivered through an intricate system of aqueducts, reservoirs, and groundwater basins.

Water Sources

Approximately 33 percent of the water supply comes from local sources, including surface water from mountain runoff, groundwater and recycled water. While local water supplies are the least costly, surface water and groundwater supplies fluctuate in response to variations in annual rainfall, contamination and effectiveness of conservation measures.

Water is imported into the County from three sources: the Colorado River, the Bay Delta in Northern California via the State Water Project, and the Owens Valley via the Los Angeles Aqueduct. The Los Angeles Aqueduct primarily serves the residents and businesses of the City of Los Angeles.

For a description of local water sources and a discussion of water quality, please refer to the Conservation and Natural Resources Element. For description of the imported water sources, please refer to Appendix I.

Water Suppliers

Water services are provided by a complex network of water districts, water wholesalers and private companies that specialize in developing and improving water service for their customers. Most of the imported water utilized in the unincorporated areas is provided by the Metropolitan Water District, Castaic Lake Water Agency, Antelope Valley/East Kern Water Agency, Littlerock Creek Irrigation District and the Palmdale Water District. For a description of water suppliers, please refer to Appendix I.

Water Management Plans

In accordance with the California Urban Water Management Planning Act of 1983, every urban water supplier that annually serves 3,000 or more customers, or provides more than 3,000 acre feet of water, must prepare and adopt an Urban Water Management Plan (UWMP). These plans contain a description and evaluation of water supplies, reclamation programs, and conservation activities. Based upon land use plans provided by local governments, population projections or other inputs, the UWMP calculates the projected water demand for the district and compares this demand against current and anticipated water supplies. These UWMPs, which are updated every five years, are provided to local governments to help inform decisions on development proposals.

UWMPs serve as building blocks for Integrated Regional Water Management Plans (IRWMPs), which define a clear vision and strategy for the sustainable management of water resources within a specific region delineated by one or more watersheds. Local and County UWMPs can be found on the Southern California Association of Government's web site at http://www.scag.ca.gov/rcp/uwmp.htm.

Issues

Drought, pollution, population growth and land use affect the quantity and quality of local and regional water supplies. The Los Angeles County climate is characterized by extended periods of dry weather and varying levels of rainfall, which range from an average of 27.5 inches per year in the San Gabriel Mountains to 7.8 inches in the Antelope Valley. The overall demand for water is projected to increase dramatically to 2035, and the cost, quality and availability of water will affect future development patterns.

1. Water Conservation

Los Angeles County needs to reduce its reliance on imported water sources. Voluntary conservation measures by industries and residents have been successful in the past, particularly with regard to outdoor water use. Two thirds of residential water use is attributed to landscape maintenance, which makes conservation measures such as planting drought tolerant, indigenous plants an important component of a water conservation policy.

The conservation of the water supply is a primary goal of the County. To reduce the County's dependence on imported water, County agencies are establishing various water conservation programs. One example from DPW is the creation of water reclamation projects and groundwater recharge facilities to capture stormwater runoff. Another effort by DPW is participation in a Water Augmentation Study, which is striving to make parcel-level groundwater recharge feasible. Additional actions include the Board of Supervisor's 2008 Countywide Water Supply and Conservation Alert. This resolution urges residents, businesses, and water purveyors to intensify water conservation efforts and directs all County departments to implement measures to achieve a 15 to 20 percent reduction in overall water demand.

The General Plan supports water conservation efforts that focus on curbing demand by reducing consumption through technological advances, such as aerators and motion sensors on low flush toilets and stalls, onsite gray water reclamation and dual plumbing; promoting xeriscaping; and organizing educational campaigns to discourage wasteful water consumption.

2. Increasing the Water Supply

Recycled water is used primarily for recharging groundwater aquifers through regional groundwater recharge operations and injection at seawater barriers. Other uses of recycled water include irrigating landscaping and supplying industrial processes. Recycled water provides a reliable and consistently high quality supply of water, but also requires additional infrastructure and modifications to regulations that govern the use of recycled water, before it can reach its full supply potential.

Several water agencies throughout Southern California, such as the Metropolitan Water District, Castaic Lake Water Agency and City of Los Angeles Department of Water and Power, are taking steps to add desalinated water to their list of water supplies. Desalination, or removing salt from ocean water, has the potential to increase the local water supply, but is also energy consumptive and costly.

Goals and Policies for Drinking Water

Goal PS/F 2: Increased water conservation efforts.	
Topic	**Policy**
Water Conservation	Policy PS/F 2.1: Implement water conservation measures, such as drought tolerant landscaping and restrictions on water used for landscaping.
	Policy PS/F 2.2: Support educational outreach efforts that discourage wasteful water consumption.
Goal PS/F 3: Increased local water supplies through the use of new technologies.	
Topic	**Policy**
Water Supply	Policy PS/F 3.1: Increase the supply of water though the development of new sources, such as recycled water, gray water, and rainwater harvesting.
	Policy PS/F 3.2: Support the increased production, distribution and use of recycled water, gray water, and rainwater harvesting to provide for groundwater recharge, seawater intrusion barrier injection, irrigation, industrial processes and other beneficial uses.

IV. Sanitary Sewers

Background

Unlike combined sewer and stormwater drainage systems in many older cities throughout the country, the sanitary sewers and the stormwater/flood control facilities in Los Angeles County are separate. The sanitary sewers convey sewage from lavatories and other plumbing fixtures in buildings and factories to a wastewater treatment facility where the effluent is treated before being discharged to the ocean or river. In the unincorporated areas, the Los Angeles County Sanitation Districts (LACSD), the Consolidated Sewer Maintenance District (CSMD), and municipal septic or wastewater systems all contribute to ensuring that the sanitary sewage system operates properly to protect public health.

Construction operations and the maintenance of facilities that collect, treat, recycle and dispose of sewage and industrial wastes is the responsibility of the LACSD. Local sewers connected to the LACSD's trunk sewer lines in the unincorporated areas are the responsibility of the CSMD. Sewer laterals connecting homes and businesses to local sewer lines are the responsibility of the homeowners for maintenance and repair.

The LACSD, which are a confederation of 24 independent districts, serve the wastewater and solid waste management needs of approximately 5.2 million people, cover over 800 square miles and service 78 cities and the unincorporated areas. As of 2005, the LACSD owned, operated and maintained 1,340 miles of sewers that conveyed 510 million gallons per day (gpd) of wastewater, 200 million gpd of which is recycled, to 11 wastewater treatment plants. The service areas for the County's sewer systems include the Joint Outfall System, which is a partnership of 17 of the 24 independent sanitation districts, the Santa Clarita Valley and the Antelope Valley.

DPW, on behalf of the CSMD, maintains 4,600 miles of main line sewers, 155 pumping stations, and four sewage treatment plants. The DPW Environmental Programs Division also permits and inspects industrial waste discharge into local sewers. The County Code requires that every business that disposes industrial wastewater obtain a permit. The Sewer System Management Plan (SSMP) controls and mitigates sewer sanitary overflows. For more information on the SSMP, please visit DPW's web site at http://dpw.lacounty.gov.

Issues

Sanitary Sewers

Sewer systems throughout the unincorporated areas are aging and require upgrades. The County does not plan for sewer infrastructure needs through long-range capital improvement planning, and instead addresses sewer infrastructure through their ongoing Condition Assessment Program utilizing their Accumulative Capital Outlay Program Funds.

In limited cases, primarily near the coast, the LACSD has accepted dry weather urban runoff into the sanitary sewer system to be treated along with sewage. To protect inland water bodies, the Los Angeles Flood Control District is evaluating the potential to construct more dryweather diversions provided the sanitary sewers have the ability to accept the dry weather flows.

Goals and Policies for Sanitary Sewers

Goal PS/F 4: Reliable sewer and urban runoff conveyance treatment systems.	
Topic	**Policy**
Sanitary Sewers	Policy PS/F 4.1: Encourage the planning and continued development of efficient countywide sewer conveyance treatment systems.
	Policy PS/F 4.2: Support capital improvement plans to improve aging and deficient wastewater systems, particularly in areas where the General Plan encourages development, such as TODs.
	Policy PS/F 4.3: Ensure the proper design of sewage treatment and disposal facilities, especially in landslide, hillside, and other hazard areas.
	Policy PS/F 4.4: Evaluate the potential for treating stormwater runoff in wastewater management systems or through other similar systems and methods.

V. Solid Waste

Background

The County has the largest solid waste management system in the country. There are seven major solid waste landfills, four minor solid waste landfills and two waste-to-energy facilities, as shown in Figure 13.1. In 2012, the County's service area generated, on average, 58,987 tons per day (tbd) of solid waste. As available space for landfills becomes scarce and more distant, and as local landfills reach their holding capacity, cities and counties have been mandated to more effectively manage waste and reduce their solid waste volume.

Figure 13.1: Landfills Map

Annual Report for the Los Angeles County Integrated Waste Management Plan (IWMP)

Assembly Bill 939, also known as the California Integrated Waste Management Act of 1989, mandates local jurisdictions to meet a diversion goal of 50 percent by 2000 and thereafter. In addition, each county is required to prepare and administer a countywide IWMP. This plan is comprised of the county's and the cities' solid waste reduction planning documents plus an Integrated Waste Management Summary Plan (Summary Plan) and a Countywide Siting Element (CSE). In order to assess a local jurisdiction's compliance with AB 939, the Disposal Reporting System was established to measure the amount of disposal from each local jurisdiction and determine if it has met the goals.

For Los Angeles County, the County's Department of Public Works is responsible for preparing and administering the Summary Plan and the CSE. These documents were approved by the County, a majority of the cities containing a majority of the cities' population, the Board of Supervisors, and the Department of Resources, Recycling, and Recovery (CalRecycle).

The existing Summary Plan, approved by CalRecycle on June 23, 1999, describes the steps to be taken by local agencies, acting independently and in concert, to achieve the mandated state diversion rate by integrating strategies aimed toward reducing, reusing, recycling, diverting, and marketing solid waste generated.

The existing CSE, approved by CalRecycle on June 24, 1998, identifies how, for a 15 year planning period, the County and the cities would meet their long-term disposal capacity needs to safely handle solid waste generated that cannot be reduced, recycled, or composted. As this 15-year planning cycle has come to an end, DPW, in consultation with the Integrated Waste Management Task Force, completed the preparation of the draft CSE update in November 2012.The draft revised CSE and its environmental document will undergo a review and approval process in compliance with numerous statutory and regulatory requirements. This includes CEQA review, and review and approval by jurisdictions in Los Angeles County, the Board of Supervisors, and CalRecycle. The goal is to complete the entire revision process, disseminate the document for public comments, and submit the final draft CSE and the environmental document to CalRecycle by 2016.

In addition, Public Works prepares an annual report to summarize the changes that have taken place since the approval of the existing Summary Plan and the existing CSE by the jurisdictions and CalRecycle. The Annual Report consists of Section D: Summary Plan Assessment and Section E: Siting Element Assessment. The other sections pertaining to individual jurisdictions, namely, Sections A, B, C, and H, are included in a separate annual report from each jurisdiction.

The 2012 Annual Report includes in-depth assessments of the County's disposal capacity needs, detailed updates on the remaining permitted in-County disposal capacity, and the County's strategy for maintaining adequate disposal capacity through 2027.

Provided certain assumptions are met, the 2012 Annual Report demonstrates that the County would meet the disposal capacity requirements of AB 939 through a multi-pronged approach, which includes successfully permitting and developing proposed in-County landfill expansions, utilizing available or planned out-of-County disposal capacity, developing necessary infrastructure to facilitate exportation of waste to out-of-County landfills, and developing conversion and other alternative technologies. Additionally, by continuing to enhance diversion programs and increasing the countywide diversion rate, local jurisdictions in Los Angeles County may further ensure adequate disposal capacity is available to serve the needs of the residents and businesses through the planning period.

Solid Waste Information Management System (SWIMS)

SWIMS was developed by DPW to provide a one-stop Internet portal for the public and solid waste industry to access information about solid waste facilities, waste disposal data, and methane producing sites. Annual reports for the County IWMP are also available on the SWIMS web site. SWIMS is a tool by which information about solid waste management activities is made readily available to the public, empowering people to make environmentally sustainable choices in managing waste. The SWIMS web site is located at http://dpw.lacounty.gov/epd/swims/.

Issues

1. Waste Generation and Disposal Capacity

The major issues regarding waste management include the growing amounts of waste being generated and disposed of; a shortage of solid waste processing facilities; and strong public opposition for new solid waste management facilities. Table 13.1 lists the remaining permitted capacity for landfills as of December 31, 2012 in accordance with the County IWMP, 2012 Annual Report, which was released in August 2013. However, since the release of the 2012 Annual Report, the Puente Hills Landfill, which is the largest landfill in Los Angeles County closed on October 31, 2013. As a result, a significant percentage of the County's solid waste may have to be exported to facilities out of Los Angeles County, which may result in increased costs and environmental impacts. This concern is exacerbated by the projected increase in waste generation to approximately 84,839 tpd by 2027.

Table 13.1: Remaining Permitted Disposal Capacity for Los Angeles County Existing Landfills (As of December 31, 2012)

Landfill	Maximum Daily Capacity (Tons)	Estimated Remaining Permitted Capacity (Million Tons)*	Remaining Life (Years)**
Antelope Valley	1,800	16.91	30
Burbank	240	2.95	41
Calabasas	3,500	5.51	16

Chiquita Canyon	6,000	3.97	2
Lancaster	3,000	12.27	13
Pebbly Beach	49	0.09	16
Puente Hills	13,200	6.10	1***
San Clemente	10	0.04	20
Scholl Canyon	3,400	3.41	16
Sunshine Canyon (City/County)	12,100	74.37	20
Whittier (Savage Canyon)	350	3.56	13
Total	**43,649**	**129.20**	**188**

Source: Los Angeles County Integrated Waste Management Plan, 2012 Annual Report, August 2013.

*Estimated remaining permitted capacity based on landfill owner/operator responses in a written survey conducted by the Los Angeles County Department of Public Works in May 2013, as well as a review of site specific permit criteria established by local land use agencies, local enforcement agencies, California Regional Water Quality Control Board, and the South Coast Air Quality Management District.

**Landfill remaining life is based on 1) the 2012 average daily disposal tonnage, 2) maximum permitted capacity as of December 31, 2012, or 3) the facility's permit restrictions as of December 31, 2012.

***The Puente Hills Landfill closed on October 31, 2013.

As detailed in the 2012 Annual Report for the County IWMP, a shortfall of permitted solid waste disposal capacity in the County is anticipated under current conditions. The use of out-of-county facilities therefore plays a critical role in meeting the County's disposal needs. For instance, the Los Angeles County Sanitation Districts acquired the Mesquite Regional Landfill in Imperial County in 2002 and completed construction of all infrastructures on December 24, 2008. The Mesquite Regional Landfill has a permitted capacity of 20,000 tpd and a 100-year lifespan. The Mesquite Regional Landfill, together with other existing out-of-County landfills, could potentially handle up to approximately 21,350tpd of waste from Los Angeles County.

To facilitate the use of out-of-County facilities, it is also important to expand transfer and processing infrastructure and develop a waste-by-rail system. Specifically, nearly all solid waste is currently transported to disposal sites in the metropolitan area by truck. However, as public opposition to siting new or expanding existing disposal facilities near urban areas has grown, sites farther from the Los Angeles Basin have become more desirable, despite the costs associated with longer transport distances. For some sites, such as the Mesquite Regional Landfill, which is 210 miles from Downtown Los Angeles, rail transport is an efficient means to transport solid waste to remote disposal sites. Transitioning to remote disposal of solid waste that involves rail transport requires new infrastructure and is currently being developed by the Sanitation Districts. The Waste-by-Rail system will provide long-term disposal capacity to replace local landfills as they reach capacity and close. The starting point of the Waste-by-Rail System is the Puente Hills Intermodal Facility (PHIMF), located near the Puente Hills Materials Recovery Facility. Residual waste from materials recovery facilities and transfer stations located throughout the County will be loaded unto rail carts at the PHIMF, and then transported via rail to the Mesquite Regional Landfill for disposal.

2. Promoting Alternative Technologies

Faced with a dwindling landfill capacity, as well as the impacts of climate change, the County must evaluate sustainable options for solid waste management, such as conversion technologies and landfill gas to energy facilities. The Sanitation Districts currently have three landfill gas to energy facilities in Puente Hills, Scholl Canyon, and Calabasas that generate electrical power from landfill gas. Landfill gas is created through the natural decomposition of refuse and has about half the energy content of natural gas. Conversion technologies refer to a wide variety of biological, mechanical, chemical, and thermal (excluding incineration) processes that convert residual post recycled municipal solid waste and other organic feedstock into useful products, alternative fuels and clean and renewable energy. Additionally, utilizing conversion technologies locally could effectively enhance recycling, reduce pollution and greenhouse gas emissions, extend the life of existing landfills and reduce dependence on fossil fuels. Conversion technologies are currently being explored by the County in conjunction with the Alternative Technology Advisory Subcommittee, which is comprised of a diverse group of representatives from public agencies, industry, community, and other experts in the field of conversion technologies. As a part of the Southern California Conversion Technology Demonstration Project, on April 20, 2010, the Board of Supervisors approved agreements to develop three conversion technology demonstration projects, and instructed DPW to begin evaluating options for the development of commercial-scale projects. For more information, please visit the Southern California Conversion Technology Demonstration Project web site at http://www.socalconversion.org.

3. Trash Hauling

For many years, two-thirds of the unincorporated areas (primarily the San Gabriel Valley and Antelope Valley), residential and commercial solid waste collection services were provided through an open-market system, whereby each resident/business directly arranged for trash collection services with no County involvement. Due to changes in federal and state laws regarding waste reduction, changing public attitudes toward protecting the environment and increasing consumer demands for better service, the open-market system was unable to fully adapt to these conditions. In response, beginning in 2007, DPW gradually implemented the following solid waste collection systems to replace the open-market system:

Garbage Disposal Districts (GDDs)

Garbage Disposal Districts (GDDs) are designated areas within the unincorporated areas where trash collection and disposal services are provided to both residents and businesses by a private waste hauler who contracts with DPW. Operational expenses are paid from revenues generated through special property tax assessments. To date, the County has established seven GDDs in the unincorporated areas of South Los Angeles and Malibu communities.

Residential Franchise System

In a residential franchise system, an agreement is awarded to an exclusive waste hauler to provide trash collection and recycling services to all single family residences and duplexes within specific unincorporated communities. The franchise system provides benefits to establish quality service and promote cleaner neighborhoods through recycling services, environmental workshops, bulky item pick-ups, and annual clean-up events. The franchise system is designed to provide uniform service standards for haulers operating in each franchise area. The system provides each community with the flexibility needed to create services that will benefit area residents. These features are modified to reflect feedback received through survey cards, community meetings, and telephone calls. This interactive process allows the County to tailor each agreement to meet the needs voiced by each

community. The franchise system also benefits the community by limiting the wear and tear on County streets, assists the County in meeting the State's waste reduction mandate, and reduces the need for new landfills. Currently, there are 21 residential franchise areas. DPW anticipates replacing the remaining residential open-market system areas, including the Antelope Valley, as early as 2014.

Commercial Franchise System

All unincorporated area businesses and multifamily residents that utilize dumpster and/or roll-off trash collection service are served by a non-exclusive franchise system. In the non-exclusive franchise system, the County allows solid waste collection services to be provided by private waste haulers, but requires haulers to enter into a non-exclusive commercial franchise agreement with the County. Under this non-exclusive franchise system, customers have a choice of more than one waste hauler because the system is open to competition to all haulers that enter into the agreement. The waste haulers deal directly with the public and businesses in competing for customers.

Goals and Policies for Solid Waste

Goal PS/F 5: Adequate disposal capacity and minimal waste and pollution.	
Topic	**Policy**
Waste Management	Policy PS/F 5.1: Maintain an efficient, safe and responsive waste management system that reduces waste while protecting the health and safety of the public.
	Policy PS/F 5.2: Ensure adequate disposal capacity by providing for environmentally sound and technically feasible development of solid waste management facilities, such as landfills and transfer/processing facilities.
	Policy PS/F 5.3: Discourage incompatible land uses near or adjacent to solid waste disposal facilities identified in the Countywide Integrated Waste Management Plan.
Waste Diversion	Policy PS/F 5.4: Encourage solid waste management facilities that utilize conversion and other alternative technologies and waste to energy facilities.
	Policy PS/F 5.5: Reduce the County's waste stream by minimizing waste generation and enhancing diversion.
	Policy PS/F 5.6: Encourage the use and procurement of recyclable and biodegradable materials.
	Policy PS/F 5.7: Encourage the recycling of construction and demolition debris generated by public and private projects.
	Policy PS/F 5.8: Ensure adequate and regular waste and recycling collection services.
	Policy PS/F 5.9: Encourage the availability of trash and recyclables containers in new developments, public streets, and large venues.

VI. Utilities

Background

The County's utility infrastructure, information and communication networks are layered with utility rights of way and properties that contain tower structures, substations, generating plants, pipelines, storage fields, valve stations, wells, radio and television studios and other equipment facilities. In the unincorporated areas, most electric, natural gas, or telecommunication services are delivered by private service providers. However, the County recognizes the need to define and ensure adequate levels of service in these areas as Los Angeles County continues to grow.

Issues

1. Energy Conservation

The unincorporated areas are faced with considerable strain on existing electricity and power delivery systems. As a result of increased electricity usage and prolonged hot weather conditions due to climate change, brown outs, or losses of power and forced reductions in electricity delivery, occur periodically throughout the State. There is a need to upgrade the County's power grid and service capabilities, and to educate the public on energy conservation. Upgrades and enhancements of local services and strong energy conservation programs can add to the reliability and efficiency of the overall utility network, and contribute to the long-term quality of life for residents and businesses.

Similarly, the region's substantial population growth is outpacing the development of new natural gas supplies, much of which is imported from out of state. In addition to heating and cooking, natural gas currently provides 73 percent to 90 percent of the energy used to generate electricity, especially during peak times. As the population continues to grow, the County must focus on the development of new natural gas supplies, including locally produced natural gas and liquefied natural gas (LNG); upgrading and enhancing the region's natural gas infrastructure system to improve reliability and efficiency; strong energy conservation programs; and renewable energy alternatives.

A major contributor to the long-term energy independence of the County will be the increased production of energy from renewable sources. The production of energy from renewable sources onsite can also ensure the ongoing operations of primary health, safety and civic infrastructure during times of disruption. The County is a participant in the Statewide Renewable Energy Transmission Initiative (RETI), which identifies sites that are suitable for various types of renewable energy sources, including geothermal, solar, wind and biomass. This issue is discussed in greater detail in the Conservation and Natural Resources Element.

2. Siting Facilities

It is important for the County to address land use compatibility in siting infrastructure facilities that are necessary for the delivery of energy and information resources. Siting utility infrastructure and facilities is difficult, as many parts of the unincorporated areas are built out with little room for facility expansion. In certain areas, there is public opposition to the expansion or placement of utility infrastructure. In the case of new natural gas storage facilities, there is added difficulty in finding locations with specific geologic conditions to ensure efficiency and reliability.

Goals and Policies for Utilities

Goal PS/F 6: A County with adequate public utilities.	
Topic	**Policy**
Utility Infrastructure	Policy PS/F 6.1: Ensure efficient and cost-effective utilities that serve existing and future needs.
	Policy PS/F 6.2: Improve existing wired and wireless telecommunications infrastructure.
	Policy PS/F 6.3: Expand access to wireless technology networks, while minimizing visual impacts through co-location and design.
	Policy PS/F 6.4: Protect and enhance utility facilities to maintain the safety, reliability, integrity and security of utility services.
	Policy PS/F 6.5: Encourage the use of renewable energy sources in utility and telecommunications networks.
	Policy PS/F 6.6: Encourage the construction of utilities underground, where feasible.
	Policy PS/F 6.7: Encourage projects that incorporate onsite renewable energy systems.
	Policy PS/F 6.8: Support the prohibition of public access within, and the limitation of access in areas adjacent to natural gas storage facilities to minimize trespass and ensure security.

VII. Early Care and Education Facilities

Background

The County's role in developing and managing educational facilities and programs is limited. However, the Los Angeles County Office of Education (COE), which is the country's largest regional education agency, serves as an intermediary between the local school districts and the California Department of Education. The COE is guided by a seven member County Board of Education, which is appointed by the Board of Supervisors. The COE provides a vision statement and strategic opportunities for educational facility development to coordinate the assessment of facility needs and the construction of schools that fall to individual school districts. For more information, please visit the COE web site at http://www.lacoe.edu.

Another role that the County plays in coordinating in public school facilities is through the County subdivision approval process, in which developers are required to assess the need for, and in some cases provide, land for the construction of public schools within their development. Development impact fees, based on the size of a development, are distributed to the appropriate school district for the construction of school facilities before the County issues any building permits.

Issues

Land Use Coordination

At a minimum, the California Education Code requires public school districts to notify the local planning agency when siting new public schools to determine if the proposed site conforms to the General Plan. In addition, school districts consult with the County through the CEQA process.

As educational facilities are major components of, and significantly impact neighborhoods, it is essential for the County to work proactively with school districts and other educational providers to ensure the coordination between land use planning and school facilities planning. Joint-use school facilities, as opposed to stand alone institutions, can benefit communities and create operational and economic efficiencies. School facilities should be accessible and open to multiple users, including students and the greater community.

As discussed in the Land Use Element and the Economic Development Element, there is a shortage of early care and education facilities in the County. According to the 2011 Los Angeles County Child Care and Development Needs Assessment, the availability of licensed care facilities—both centers and family child care homes—varies by age. For infant/toddlers, there are sufficient facilities to accommodate only one out of every seven children in working families; for preschool-age children, there are three spaces for every four children; for school-age children requiring after school care while parents work, there is one licensed space for every three children. Half-day preschool options are available for seven out of every ten eligible children of three and four years who are able to use a half-day program. For more information on 2011 Child Care Needs Assessment, please visit the CEO Office of Child Care web site at http://childcare.lacounty.gov.

Goals and Policies for Early Care and Education Facilities

Goal PS/F 7: A County with adequate educational facilities.	
Topic	**Policy**
Early Care and Educational Facilities	Policy PS/F 7.1: Encourage the joint-use of school sites for community activities and other appropriate uses.
	Policy PS/F 7.2: Proactively work with school facilities and education providers to coordinate land use and facilities planning.
	Policy PS/F 7.3: Encourage adequate facilities for early care and education.

VIII. Libraries

Background

The County of Los Angeles Public Library is one of the largest public library systems in the country. In fiscal year 2011-2012, the Library staff circulated 16.5 million items to 3.1 million cardholders; answered over 8 million reference questions; provided 18,000 programs to 500,000 children, teens, and adults; and assisted the public with three million internet sessions on the Library's public access computers. The Library system is a special fund County department operating under the direction of the Board of Supervisors. Figure 13.2 identifies the County libraries and service planning areas.

Figure 13.2: Libraries Map

Supplementing the 7.5 million volume book collection, the Library also offers magazines, newspapers, microfilm, government publications, specialized reference materials, magazines, audio-visual media, adult, teen and children programs, downloadable audio and e-books, and internet access, including WiFi.

For more information on the Library system, please refer to the County of Los Angeles Library Strategic Plan, which can be viewed at http://www.colapublib.org/aboutus/strategic.html.

Library Facilities Mitigation Fees

The County applies a library facilities mitigation fee to new residential developments in the unincorporated areas. This fee is intended to mitigate the significant adverse impacts of increased residential development on the Library system. The library facilities mitigation fee is based on the estimated cost of providing the projected library facility needs in each library planning area. Please refer to Section 22.72.030 of the County's Zoning Code for the library facilities mitigation fee in each of the seven library planning areas.

The mitigation fee in each planning area is reviewed annually by the County Librarian, in consultation with the County Auditor Controller, and is adjusted every July 1. According to the Zoning Code, no adjustment shall increase or decrease the fee to an amount more or less than the amount necessary to recover the cost of providing applicable library facilities and services.

The provisions of the Library Facilities Mitigation Fee Ordinance are applicable to residential projects only. All library facilities mitigation fees received by the County are deposited into a special library capital facilities fund (one for each library planning area), and expended solely for the purposes for which the fees were collected.

Issues

Library Facility Needs

The majority of the County's 86 libraries are undersized and understocked to meet the service needs of current and projected populations served by the Library system. A study conducted by the Library in April 2001 determined that many of the County's libraries do not meet basic facility and service planning guidelines. The current guideline for library facility space is a minimum of 0.5 gross square foot per capita. The 2001 study determined that 89 percent of existing libraries will not meet that standard in the year 2020. In addition, the study determined that by 2020, 77 percent of existing libraries will not meet the Library's current service level planning guideline of 2.75 items (books and other library materials) per capita.

Many existing County libraries are located in areas with little or no new residential development, and therefore, there are no mitigation fees or other reliable sources of capital funding available to replace or expand them. A permanent source of funding to replace or expand existing facilities is needed to meet the projected population growth in the Library's service areas over the next two decades.

Goals and Policies for Libraries

Goal PS/F 8: A comprehensive public library system.	
Topic	**Policy**
Library System	Policy PS/F 8.1: Ensure a desired level of library service through coordinated land use and facilities planning.
	Policy PS/F 8.2: Support library mitigation fees that adequately address the impacts of new development.

IX. Public Services and Facilities Element Implementation Program

- Planning Area Capital Improvement Plans
- Water Conservation Ordinance
- Agricultural Water Conservation Program

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Box]

Constituent Service Centers and Environmental Service Centers

Due to geographic spread and demographic characteristics, there is a need to establish a number of local centers that can address specific constituent needs and requests, in close proximity to homes and places of work. Constituent Service Centers provide high quality, public services at conveniently located facilities. Specific County department presence will be tailored to each community's needs, including but not limited to community meeting rooms, libraries, senior community centers, and field offices for various County departments such as Consumer Affairs, Sheriff, Planning, and Building and Safety. Additional services could include Adult Protective Services, and space for community-based organizations. Constituent Service Centers include the East Los Angeles Civic Center, and two in Florence-Firestone and Lennox.

Environmental Service Centers are Constituent Service Centers that provide assistance to the community on environmental initiatives, such as the County's Green Building Program, AB 811 and the PACE program. County staff is available to answer questions about retrofits, water conservation, and the County's Green Building policies. An Environmental Service Center is located in West Athens-Westmont.

Chapter 14: Economic Development Element

I. Introduction

From its origins as a sparsely populated agricultural area, Los Angeles County has developed into a national and global economic center. Today, the County's economy is diverse and fast-changing, and faces global competition for economic resources.

The Economic Development Element outlines the County's economic development goals, and provides strategies that contribute to the economic well-being of the County. The overall performance of the economy and economic development efforts strongly impact land use and development patterns. Through the implementation of this Element, the County is planning for the economic health and prosperity of its physical and social environments, and planning strategically for the future economy.

The Element works in conjunction with the Los Angeles County Strategic Plan for Economic Development, which was adopted by the Los Angeles County Board of Supervisors in 2010. The Strategic Plan can be found at the following link:

http://www.lacountystrategicplan.com/documents/LACountyStrategicPlanforED.pdf.

II. Background

Los Angeles County's historical growth pattern of sprawling single family development, with scattered commercial and industrial uses, has strongly influenced its economy.

The first major economic sectors to emerge in Los Angeles County were land development, real estate and the entertainment industry, which continue today to play a major role in the regional economy. In addition, the aerospace industry was responsible for some of the major growth spurts in Los Angeles County. By the 1960s, the aerospace industry employed hundreds of thousands of workers, which accounted for nearly half of the manufacturing jobs in Los Angeles County at that time.

During the 1990s, major economic, social, and environmental trends impacted Los Angeles County's economy, and in particular, its manufacturing sector. The end of the Cold War reduced defense spending, which significantly impacted the aerospace and related manufacturing industries. In addition, with free trade agreements and globalization, local, regional, state and national level economies merged with the global economy, and competition from overseas producers with cheaper labor and production costs prompted an exodus of manufacturing jobs from Los Angeles County.

The present economy of Los Angeles County is technology-driven, including biomedical, digital information technology, and environmental technology. Another key economic driver is the creative economy, which includes industries involved in the production of cultural, artistic, and design goods and services. Specifically, the fusion between technology and creativity, such as innovations in interactive media, plays an important role in the region's economic growth. International trade, aerospace, petroleum, and tourism continue to drive the economy, as well as media production, finance, telecommunications, law, healthcare, and transportation.

Employment Land

Appendix J identifies and analyzes employment land within the unincorporated areas. The study organizes the employment land into Employment Protection Districts, Industrial Flex Districts, and Industrial Opportunity Areas.

Employment Protection Districts

Employment Protection Districts are economically-viable industrial and employment-rich lands, with policies to prevent the conversion of industrial land to non-industrial uses. These areas, which are identified in Figure 14.1, are mapped as Employment Protection District Overlays in the General Plan Land Use Policy maps. For more information on the Employment Protection District Overlay, please refer to the Land Use Element.

Industrial Flex Districts

Industrial Flex Districts are industrial areas that provide opportunities for non-industrial uses and mixed uses, where appropriate, but also light industrial or office/professional uses that are compatible with residential uses. As opportunity areas, as discussed in Chapter 5: Planning Areas Framework of the General Plan, Industrial Flex Districts serve as a framework for future industrial land use considerations in community-based planning efforts.

Industrial Opportunity Areas

Industrial Opportunity Areas are economically viable industrial and employment-rich lands located in an unincorporated community that has an adopted community-based plan. It is highly recommended that during the update of the community-based plan, these areas be mapped as Employment Protection Districts.

Figure 14.1: Employment Protection Districts Policy Map

Economic Sectors and Jobs

Countywide

Los Angeles County has a diverse economic base, with multiple industry clusters spread across both incorporated and unincorporated areas. Although many of the largest employers are located in incorporated areas, the unincorporated areas support the regional economy with public sector jobs and services, manufacturing jobs, housing construction, and tourist destinations such as beaches and theme parks. Due to the difficulty in isolating economic drivers in the non-contiguous, geographically dispersed unincorporated areas, this section first presents key employment sectors for Los Angeles County, followed by an analysis by Planning Area

Despite significant losses, Los Angeles County is still the largest manufacturing center in the country. It is also home to the ports of Los Angeles and Long Beach, which combined, is considered the sixth busiest port in the world.

Increased population growth has transformed the economic landscape, and growth in small and minority-owned businesses have contributed to offsetting the decline in manufacturing jobs. Although Los Angeles County has gained jobs in recent years, the total number of jobs has only recently rebounded to 1990 levels.

According to the Los Angeles County Economic Development Corporation (LAEDC), the largest growth sectors countywide in terms of jobs are professional, scientific and technical services, health

services, and retail trade. Los Angeles County continues to have a net decrease in durable goods manufacturing and construction jobs, and a weakening housing sector will continue to affect the regional economy. The LAEDC identifies the following key leading industry clusters:

- Entertainment
- Fashion
- Aerospace and Analytical Instruments
- Trade (transportation, logistics, and distribution)
- Education and Knowledge Creation
- Publishing and Printing
- Metal Manufacturing
- Biomedical
- Tourism

Planning Area

Antelope Valley Planning Area

The largest economic sectors in the Antelope Valley include government, retail services, and manufacturing, in large part due to the major concentration of aerospace research and development activity. Agriculture is also a major contributor to the economy in the Planning Area. Government employs nearly 20 percent of all employed persons in the Planning Area. The Planning Area economy is affected by the availability of affordable land, and the prospect of locating an “inland port” to handle trade near the Palmdale Regional Airport, which may provide the Antelope Valley with an important economic opportunity.

Coastal Islands Planning Area

Over 80 percent of Santa Catalina Island has been set aside by the Catalina Island Conservancy, which is dedicated to conservation, recreation, education, and research programs. The primary economic driver on Santa Catalina Island is tourism and recreational-related activities, such as boating and fishing. The majority of visitor activities in the unincorporated areas occur in the Two Harbors area.

East San Gabriel Valley Planning Area

Over the past decades, the San Gabriel Valley has lost jobs in manufacturing, while gaining jobs in the international trade sectors. The biggest economic sectors in the Planning Area are professional and business services, retail, educational and health services, and international trade. The major educational institutions in the Planning Area include California State Polytechnic University Pomona, University of La Verne, Azusa Pacific University and the Claremont McKenna Colleges, which are important economic generators in the area. The Planning Area includes Employment Protection Districts in South Walnut, South San Jose Hills, and Avocado Heights.

Gateway Planning Area

The Planning Area has evolved from an expanse of citrus orchards to one of the most important and busiest industrial and logistical hubs in the country. This region contains the largest concentration of manufacturing jobs in Los Angeles County, and is a hub for wholesale trade, warehousing and logistics. It is also home to three heavily-industrial cities: Commerce, Santa Fe Springs, and Vernon. Although manufacturing is still a large part of the Planning Area's economy, over the years, the number of manufacturing jobs has declined. In addition, the Planning Area lacks high-tech industries and modern office and industrial space. Furthermore, because it is an older region, the Planning Area lacks large blocks of developable land, which constrains the growth of the region's industries. The Planning Area includes Employment Protection Districts in Rancho Dominguez, South Whittier-Sunshine Acres, West Whittier-Los Nietos, and North Whittier.

Metro Planning Area

The Planning Area has seen significant losses in the manufacturing sector over the last 20 years, and little to no overall economic or job growth. It is estimated that current unemployment rates in some unincorporated communities are very high. The California Employment Development Department estimates Florence-Firestone to have a 25 percent unemployment rate, and West Athens-Westmont to have a 15 percent unemployment rate. The East Los Angeles area has had very little recent economic growth, and experienced a significant loss of manufacturing, which historically had been a stable economic presence in the area, in addition to government employment and educational and health services. The Planning Area includes Employment Protection Districts in Florence-Firestone and West Rancho-Dominguez.

San Fernando Planning Area

The Planning Area is a major center for entertainment, tourism, professional and business services, education, health services, and manufacturing. California State University Northridge and four community colleges work closely with the private sector to train the Valley's workforce of more than 750,000 people. The Universal Studios Specific Plan area is unincorporated land that houses the Universal Studios filming lot and is a large economic center within the Planning Area. The Planning Area includes an Employment Protection District in Lopez Canyon.

Santa Clarita Valley Planning Area

The Planning Area contains a wide variety of retail, office, industrial, medical, and entertainment centers that provide employment, goods, and services to both regional and local market areas. The Planning Area is experiencing an increase in jobs, but not enough economic growth to achieve a jobs-housing balance. Many people in the region still commute great distances for their employment. The largest economic sectors in the Planning Area are professional and business services, with several growing industries including biomedical, entertainment, technology, and aerospace manufacturing, due to the availability of land and facilities, as well as a qualified workforce. From 1992 to 2005, almost 40,000 new jobs were created in the Planning Area. Between 2000 and 2005, job growth averaged about 3,900 jobs per year. Most of this job growth occurred in the manufacturing, services, retail trade, and construction sectors.

Santa Monica Mountains Planning Area

Visitor-serving commercial and recreational uses are the primary economic activities in the Planning Area. The primary land uses in the Santa Monica Mountains are open space and low-density single

family residential. Nodes of local-serving commercial activity are scattered among a few locations in the Santa Monica Mountains.

South Bay Planning Area

The Planning Area is home to numerous offices for company headquarters, research and development facilities, manufacturing, health care, telecommunications, financial services, and international trade businesses. Educational institutions, such as California State University-Dominguez Hills and several community colleges provide training and degree programs to meet the needs of industry. The Planning Area includes Employment Protection Districts in West Carson and Lennox.

West San Gabriel Valley Planning Area

The West San Gabriel Valley Planning Area is employment-rich with several major employment centers, such as Jet Propulsion Laboratory and the California Institute of Technology. The Planning Area is also located near Downtown Los Angeles and is the gateway for goods movement infrastructure heading east. In addition, opportunities exist in some older commercial corridors to facilitate mixed use development and pedestrian amenities. The Planning Area includes Employment Protection Districts in Whittier Narrows and East Pasadena-East San Gabriel.

Westside Planning Area

The economy of the Planning Area is based on the entertainment industry, leisure and hospitality services, professional services, entrepreneurialism and design. The petroleum industry also supports many jobs, contributing significantly to the local economy. The Planning Area has very low office vacancy rates and high rents. Major education institutions and employers include the University of California Los Angeles and Loyola Marymount University.

Tools for Economic Development

In 1982, the Board of Supervisors consolidated three entities—the Housing Authority, Community Development Department, and the Redevelopment Agency—to form the Los Angeles County Community Development Commission (CDC). The CDC's Economic and Housing Development Division is responsible for implementing the County's economic development policies and programs in the unincorporated areas. In addition, the CDC is responsible for administering Board of Supervisors Policy No. 5.125, Economic Development Business Incentive Program, on a countywide basis. In addition, the County established the Los Angeles County Office of Small Business (OSB) to assist small businesses and connect them with government opportunities, and serve as a source of information on procurement opportunities, certification, financing, and technical assistance.

Below is a description of the economic development programs administered by the County. More information can be found on the CDC's web site at http://lacdc.org. More information on the Los Angeles County OSB can be found at http://doingbusiness.lacounty.gov/osb.htm.

Small Business Development Tools

In addition to assisting small businesses and connecting them with government opportunities, OSB serves as the County Procurement Technical Assistance Center, which is funded by the U.S. Department of Defense to help small businesses obtain contracts with prime defense contractors. In addition, OSB provides workshops and training for small businesses on how to sell goods and services to the County, the State, the federal government, and other public agencies in Southern California.

The Business Technology Center of Los Angeles County (BTC) is another example of the County's efforts to assist start-up, early stage small businesses to grow. The BTC, which is a project of the CDC, is dedicated to the development of high technology firms through business management assistance, technical assistance, and the coordination of available financial resources. The 40,000 square-foot facility, which is located in unincorporated Altadena, offers key business support services to emerging technology organizations, including access to capital and business professional mentorship from a large volunteer group of seasoned executives. The BTC houses companies with specialties such as software development, bio-informatics, cutting edge sensors and the commercialization of federal laboratory technologies. Tenants of the BTC have attracted over $200 million in capital and created over 1,800 jobs.

The CDC also operates business lending programs that have provided more than $125 million in business loans and created or retained over 3,000 jobs. The CDC offers loans for a variety of purposes—large and small businesses, commercial or industrial. These include the County Business Loan Program, County Expansion Loan Program, County Utility Loan Program, County Float Loan Program, Section 108 Loan Guarantee Program, and the County Technology Loan Program. These loan programs are designed to assist businesses that cannot obtain conventional bank financing.

Revitalization Tools

The CDC administers a comprehensive economic development program focused primarily on services to the unincorporated areas. The CDC also administers the Los Angeles Urban County CDBG Program for the unincorporated areas and 49 participating cities. CDBG funds have been used for many economic development activities, including land assembly and relocation to accommodate business expansion in low and moderate income areas.

The CDC also administers a Community Business Revitalization (CBR) Program, which provides grants and technical services to businesses and property owners to improve or rebuild storefront façades. Older commercial corridors in low and moderate income areas like those assisted through the CBR Program are vulnerable to vacancy and decay as retail trends have evolved over recent decades. Over 400 businesses have been assisted since the CBR Program's inception.

The CDC also assists in the creation of Business Improvement Districts (BIDs) to revitalize commercial corridors by working with local chambers of commerce and business associations to provide the technical assistance and capacity building necessary to pursue the BID process. Following the adoption by a vote of local property owners, BIDs can provide business-related improvements; image enhancement; promotions; physical amenities; maintenance (i.e., sidewalk cleaning, litter/bulky item pick-up, etc.); professional services (i.e., activities/services consultant); supplemental public services (i.e., security, other maintenance, etc.); and related management and operational services that directly benefit businesses and real property located in the BID, as determined by the property owners.

III. Issues

1. Economic Growth

Despite the continued population growth of Los Angeles County, total job numbers have only reached 1990 levels in recent years. Major growth areas include low-wage service and retail jobs. The rise in low-wage jobs is projected to continue.

Also, a significant portion of the economic growth in the last 15 years has been in the informal economy, as well as the growth of small and minority-owned businesses. However, these businesses often have limited growth potential due to limited access to capital and expansion opportunities.

2. Attracting Target Industries

The following industry clusters have the most potential to contribute to a broad-based, stable, and expanding economy for Los Angeles County:

Entertainment

Los Angeles County is home to an internationally-recognized entertainment industry and is the site of major television and movie production activities, video game and digital entertainment production, and an increasing number of fine arts establishments and venues. To prevent the relocation of entertainment production to other states and overseas, the County must continue to pursue state incentives to keep entertainment production in California and in the Los Angeles region. In addition, the County must address the potential conflicts between communities, filming and production, and balance the needs of the entertainment industry with community concerns.

Fashion

The fashion industry workforce in Los Angeles County is more than twice the size of the fashion industry workforce in New York's fashion district. Big name designers operate alongside small, independent shops. Many fashion education programs support these activities, including the Fashion Institute of Design and Merchandising and the Otis College of Art and Design.

Aerospace and Analytical Instruments

With research universities, private think tanks, a NASA outpost, and research and development facilities, Los Angeles County lays claim to a sizeable share of the high-tech marketplace. Employment in the aerospace cluster is concentrated in the manufacturing of aerospace products and parts. The analytical instruments cluster supports the aerospace industry through the production of aerospace instrumentation. Both clusters demand a highly-skilled workforce and offer wages that are double the average of wage in Los Angeles County.

Trade

The ports of Los Angeles and Long Beach, along with the Los Angeles International Airport (LAX), handle more cargo than any other region in the country, and trade and logistics continues to be a growing economic sector in Los Angeles County. Infrastructure improvements related to trade and goods movement should be prioritized to maintain Los Angeles County's competitive hold on this sector. Additionally, expanding trade and goods movement can benefit Los Angeles County. For example, facilitating the creation of an "inland port" near the Palmdale Regional Airport would alleviate congested conditions in the ports and airports in the southern portion of Los Angeles County, while also strengthening the employment base in the northern portion of Los Angeles County. For an inland port to succeed, economical routes must be identified and supported by infrastructure improvements.

Education and Knowledge Creation

There are approximately 120 accredited institutions in Los Angeles County that confer associates, bachelors, and graduate degrees. Three universities—California Institute of Technology (Caltech), University of California Los Angeles, and University of Southern California—received more than $2.06 billion in research funding from federal agencies in 2010.

Publishing and Printing

Los Angeles County is a hub for publishing and printing activity, including book and directory publishing, music publishing, internet publishing and broadcasting, and web search portals.

Metal Manufacturing

Los Angeles County is the nation's number one manufacturing center in terms of employment. Los Angeles County is known for its expertise in advanced materials, such as composites, ceramics, polymers, and the latest innovations in nanomaterials. The presence of the aerospace industry has been a motivating factor in the research, development, and deployment of new materials and processes.

Biomedical

Health sciences and biomedical research represent a growing industry that provides high-paying jobs. Los Angeles County cannot capitalize on this sector without addressing the lack of high-tech industrial or office space. Land use policy can increase the amount of land available for this target industry.

Tourism

Los Angeles County must continue to promote its cultural icons and expand its tourist destinations. A countywide umbrella organization is needed to focus initiatives into regional efforts that effectively promote a "Los Angeles" brand.

In addition to the above, Los Angeles County should focus efforts on growing the nascent, but fast-emerging innovation-based sectors, including digital media, clean technology (e.g., electric vehicles and renewable energy), and advanced materials.

3. Impact of Land Use Policy on the Economy

Land designated for industrial and employment-rich uses is needed to retain and attract businesses and jobs. Los Angeles County's historic growth patterns and land use policies have resulted in the conversion of much of the available industrial land for non-industrial uses. The remainder of industrial and office space is not sufficient to meet the needs of existing and emerging industries. The County's employment preservation strategy for the unincorporated areas, which is designed to discourage the conversion of areas with significant industrial uses to non-industrial uses, is described in the Land Use Element.

Incompatible land uses in and around industrial areas also hinder economic growth. For example, allowing residential uses in industrial areas increases tensions between the business community and new residents, as industrial activities often produce noise, odor, smells, traffic congestion, and other environmental impacts. Industrial land also needs to be buffered to avoid conflicts, and industrial uses must be thoughtfully incorporated into community-based planning efforts to address potential environmental justice impacts.

4. Impact of Mobility Infrastructure on the Economy

Mobility is a key component of economic development, as businesses and industry require efficient road, rail, shipping, and air networks to transport goods and services, and as employees and residents need access to employment centers. Much of the transportation infrastructure of Los Angeles County is strained, aging and over capacity. Traffic congestion, compounded by aging infrastructure, is an economic obstacle for local businesses. Major transportation networks, such as the freeways leading out of the ports of Los Angeles and Long Beach, are congested. The aging and congested transportation infrastructure will continue to inhibit development efforts and business activities unless it is upgraded. The Mobility Element contains information about planning efforts underway to increase goods movement efficiency in the unincorporated areas and the region.

The County's approach to transportation infrastructure must advance economic success, but also be sustainable. The Alameda Corridor, which allows for the transport of freight on a dedicated rail line to inland transfer yards, is an example of a project that improves the transportation infrastructure, while mitigating the environmental impacts of trucking and trade activities. In addition to infrastructure for goods movement, an adequate public transit system is essential for moving and retaining a vital workforce in an environmentally sensitive manner. The Los Angeles County Metropolitan Transportation Authority (Metro) rail projects, including the Gold Line extension in the San Gabriel Valley and the Crenshaw-LAX corridor, will help improve jobs-housing balance. The Transit Oriented Districts, as described in the Land Use Element, provides opportunities for more housing and commercial uses next to existing Metro stations.

5. Revitalization

To achieve broad-based economic prosperity, local governments must stimulate business activity in neighborhoods that have limited economic opportunities. As revitalization activities can attract major new industries and businesses, the County can focus its resources on improving economically-distressed communities within the unincorporated areas.

In recent years, the State has eliminated redevelopment agencies and the local enterprise zone program to address budget issues. The elimination of these programs has reduced the resources and authority available to the County to conduct economic development activities. Several legislative proposals have emerged to return economic development tools to local governments, although none have been enacted as of 2013. Should the State act to create new economic development programs and incentives for local governments, the CDC will be prepared to make recommendations to the Board of Supervisors as to how to utilize any new resources or authority made available.

In addition, the CDC will actively pursue new financing strategies for real estate transactions that would promote job creation. Options may include creating a New Market Tax credit entity to provide investment capital for low-income communities throughout the county. Furthermore, the CDC will increase efforts to work collaboratively with philanthropic institutions to provide flexible financing for economic development.

6. The Role of Education in Economic Development

Los Angeles County is in need of more training and workforce development programs, as much of the blue collar workforce is not prepared to meet the job demands of the future. The continued globalization of the economy means that local workers with limited education have to compete with an increasingly educated global workforce. In addition, federal and state government cuts to education put Los Angeles County at greater risk of losing its competitive edge.

According to the LAEDC, over 50 percent of the working-age population in Los Angeles County has low levels of literacy, with a high percentage lacking a high school diploma or a GED. The industries that will provide the most economic returns require a workforce with a knowledge base and advance technical training. Furthermore, continuing demographic shifts over the next two decades will dramatically change the region's population, particularly the prime working age population. While the baby boom generation retires, a steady influx of low-skilled workers will comprise of an increasingly large portion of the labor pool.

A skilled and dedicated workforce is important for sustaining Los Angeles County's economic competitiveness, and invigorating economic activity through the reinvestment of wages. Fostering a diverse and cutting-edge industry base requires a synergistic relationship between companies and a well-developed workforce to advance technologies.

Multiple federal, state, county and local agencies aim to ensure that Los Angeles County's workforce is well-trained. The Workforce Investment Board (WIB) and the County's Community and Senior Services (CSS) are leading efforts to strengthen coordination of inter-governmental and inter-agency programs with America's Job Centers of California (AJCC). Coordinating with the AJCC system, a comprehensive career center network established by the federal Workforce Investment Act with locations in Los Angeles County, will better meet current and prospective needs of employers and job seekers. The County's workforce development system will align and place greater emphasis on employment, training and business services in high-growth industry sectors and in-demand occupations.

Consistent with the state WIB and Governor's strategic priorities to achieve a more competitive workforce, sustain economic prosperity, and strengthen the workforce development pipeline between education, training providers, job seekers and employers, the County's WIB and the Board of Supervisors adopted in 2013 a Five-Year Local Area Strategic Plan to better address the skills gap of the current and future workforce in the region. This forward-looking plan embraces strategic workforce development goals including: a partnership with the state Employment Development Department to deliver integrated services; unified AJCC branding that highlights the County's commitment and investment; a commitment to devoting 25% of resources to training in high-growth sectors; enhanced regional leadership and partnership with six other WIBs in Los Angeles County as well as with other stakeholders in education, economic and workforce development; an emphasis on older and out-of-school disconnected youth; year-round subsidized work experience opportunities; and a greater investment in STEM (Science, Technology, Engineering and Math) initiatives.

Workforce development programs will be strategic and demand-driven in targeted industries while preparing in and out-of-school youth for post-secondary education and career success.

Most importantly, the County's workforce development and training programs will increasingly focus on meeting the needs of emerging and growth industries, especially in high-growth sectors such as green/clean energy, transportation and logistics, health care, biotech, construction, and hospitality and tourism. Utilizing labor market intelligence information from LAEDC, the WIB has approved funding for six Sector Intermediaries to convene and engage employers and business to identify the employment and training needs in these key sectors, and align training and case management resources to ensure job seekers are aware of, and competitive for sustainable employment and careers in the existing regional economy.

More information about the Los Angeles County Workforce Investment Board's Strategic Plan for 2013-2017 can be found on the Worksource California web site at: http://www.worksourcecalifornia.com/information/wib_LAcounty.htm.

7. The Need for Centralized Economic Development Planning

The LAEDC collects and distributes information on growth and market trends on a regional basis, encourages cooperation among jurisdictions to implement long-term goals for shaping the economy, and advocates for a more cohesive and unified economic development strategy. As a first crucial step to developing a unified countywide strategy, the LAEDC has worked with more than 1,080 stakeholders, including representatives from the public, private, business, government, labor, education, environmental, and community-based organizations, to develop the Strategic Plan for Economic Development in Los Angeles County. The Board of Supervisors adopted the Los Angeles County Strategic Plan for Economic Development in 2010.

Additionally, the County needs to proactively address business and economic development needs, including the provision of financial and regulatory incentives to attract jobs and target industries, and foster public-private partnerships.

8. Competitive Disadvantages

For Los Angeles County, increased global competition has resulted in tighter profit margins for economic sectors, and more cost-effective markets for labor and materials have made production methods more mobile and international. A study by the Los Angeles Economic Roundtable shows that in Los Angeles County, a business environment characterized by high production costs, high utility costs, strict environmental regulations, and a perceived indifference to the importance of industrial uses, are contributing to the relocation of industries to areas where incentives are attracting industries and businesses. One primary example of the effect of global and regional competition on Los Angeles County's economy is the regional trend of job losses in the manufacturing sector. Although local leaders have made significant efforts to retain manufacturing activities in the region, manufacturing jobs are relocating overseas, to inland areas and to other states due to lower production costs.

Another disadvantage for economic development is the high cost of doing business in Los Angeles County. For example, Los Angeles County has higher utility and energy costs compared to other regions, and the energy network may not be sufficient to meet the demands of both businesses and residential customers during peak energy periods. For the unincorporated areas in particular, many sites are not suitable for intense development, as they are dedicated open space or located within a fire hazard zone, flood zone, or other hazard area. For its part, the County is working to reduce the time and uncertainty associated with the permitting process by coordinating project reviews across departments in "one-stop" meetings with applicants.

Furthermore, industrial land and office space in the unincorporated areas are in need of retrofits and upgrades to accommodate target industries and attract high-paying jobs. More aggressive strategies and infrastructure improvements must be implemented to attract business and industry to limited, but key locations in the unincorporated areas.

Furthermore, the shortage of affordable housing and early care and education, have major impacts on the workforce as well as on the regional economy and economic development efforts. High housing costs are a deterrent to attracting an educated middle class labor force. Regional attention to building housing for all income levels is a primary factor in the success of the County's economic future. Early care and education is not only extremely important to working families, it is important to the communities in which they live and work. A report in 2008 entitled *The Economic Impact of Early Care and Education Industry in Los Angeles County* indicates that the early care and education industry generates $1.9 billion annually and provides over 65,000 full-time equivalent jobs in Los Angeles County. The report concludes that Los Angeles County's future economic productivity

depends upon investment in quality early care and education as a critical industry. The report also indicates: “The short-term economic benefits to working families and their employers are apparent. Equally important are the long-term benefits in human capital—children, their school readiness, and the productivity of the future workforce.” A copy of the report is available on the CEO Office of Child Care web site at http://childcare.lacounty.gov.

IV. Goals and Policies

Goal ED 1: An economic base and fiscal structures that attract and retain valuable industries and businesses.	
Topic	**Policy**
Target Industries	Policy ED 1.1: Encourage a diverse mix of industries and services in each Planning Area.
	Policy ED 1.2: Encourage and foster the development of the renewable energy economic sectors.
	Policy ED 1.3: Encourage public-private partnerships to support the growth of target industries.
	Policy ED 1.4: Encourage the expansion and retention of targeted industries and other growth economic sectors, such as the entertainment industry, aerospace industry, agriculture, transportation/logistics, healthcare, biomed/biotech, hospitality and tourism.
County Incentives for Business	Policy ED 1.5: Provide quality, responsible, and business-friendly municipal services to attract and retain businesses and employees.
	Policy ED 1.6: Develop, advance, and promote competitive advantages for economic development and growth.
	Policy ED 1.7: Identify opportunities to lower the costs of doing business in Los Angeles County.
	Policy ED 1.8: Promote Los Angeles County as a national and international center for business, global trade, and development.
Goal ED 2: Land use practices and regulations that foster economic development and growth.	
Topic	**Policy**
Industrial Land	Policy ED 2.1: Protect industrial lands, especially within Employment Protection Districts, from conversion to non-industrial uses.
	Policy ED 2.2: Utilize adequate buffering and other land use practices to facilitate the compatibility between industrial and non-industrial uses.
Business and Environmental Justice	Policy ED 2.3: Ensure environmental justice in economic development activities.
	Policy ED 2.4: Ensure high standards of development and encourage environmentally sustainable practices in economic development activities.
	Policy ED 2.5: Encourage employment opportunities to be located in proximity to housing.
	Policy ED 2.6: Encourage community-serving uses, such as child care centers and personal services, to be located in proximity to employment centers.
	Policy ED 2.7: Incentivize economic development and growth along existing transportation corridors and in urbanized areas.

Streamlined Permit Processing	Policy ED 2.8: Streamline the permit review process and other entitlement processes for businesses and industries.
Agriculture	Policy ED 2.9 Explore zoning incentives for the operation of farms in Agricultural Resource Areas (ARAs).
Goal ED 3: An expanded and improved infrastructure system to support economic growth and development.	
Topic	**Policy**
Infrastructure Improvements	Policy ED 3.1: Utilize capital improvement plans to prioritize infrastructure investments.
	Policy ED 3.2: Support the use of public-private partnerships to develop, fund, and deliver critical infrastructure.
	Policy ED 3.3: Work with state agencies dedicated to financing important critical infrastructure and economic development projects.
Goal ED 4: Enhanced revitalization activities.	
Topic	**Policy**
Economic Development Strategies	Policy ED 4.1: Develop a range of financial incentives and programs that encourage development and business growth.
	Policy ED 4.2: Support the development of community-level economic development strategies in line with the Los Angeles County Strategic Plan for Economic Development.
	Policy ED 4.3: Support the development of small business assistance and entrepreneurial programs that are focused on management, financial planning, and technology application.
Infill Development	Policy ED 4.4: Incentivize infill development that revitalizes underutilized commercial and industrial areas.
	Policy ED 4.5: Direct resources to economically distressed areas to spur revitalization activities.
	Policy ED 4.6: Retrofit and reuse vacant and underutilized industrial and commercial sites for emerging and targeted industries.
	Policy ED 4.7: Support expedited permitting for green building retrofits.
Goal ED 5: A skilled and educated workforce.	
Topic	**Policy**
Education	Policy ED 5.1: Attract and retain highly-skilled graduates, in particular, graduates of science and engineering programs.

	Policy ED 5.2: Support and create collaborative educational programs that address specific under-employed populations and workforce needs in targeted areas.
	Policy ED 5.3: Encourage outreach efforts to educational and community-learning institutions to expand workforce education programs.
	Policy ED 5.4: Expand functional literacy and English as a Second Language (ESL) programs.
	Policy ED 5.5: Support linked programs that align high schools with community colleges and four-year institutions.
	Policy ED 5.6: Engage employers earlier in the education and workforce development process to ensure work-readiness and a smooth transition from school or training to work placement.
Job Training	Policy ED 5.7: Ensure that businesses have enough skilled workers to meet their workforce needs.
	Policy ED 5.8: Prepare, train, and educate job seekers and incumbent workers to find and advance in high-value, high-wage jobs with built-in career ladders.
	Policy ED 5.9: Promote the attraction, retention and expansion of commercial and industrial firms that provide employment improvement opportunities for unskilled and semi-skilled workers.
	Policy ED 5.10: Initiate vocational training programs that provide the skills necessary for participation in the labor force.
	Policy ED 5.11: Collaborate with the private sector to identify growing workforce needs and link training initiatives to the needs of target industries.
	Policy ED 5.12: Establish employer assistance initiatives to expand skilled trades training and vocational education for high demand occupations.
	Policy ED 5.13: Play a leadership role in convening and coordinating the activities of key regional workforce development system stakeholders, including the six other WIBS that operate within Los Angeles County, as well as community colleges, businesses, K-12 institutions, philanthropic partners and others.
Goal ED 6: Collaborative efforts to implement coordinated economic development activities.	
Topic	**Policy**
Coordinated Economic Development	Policy ED 6.1: Encourage a collaborative inter-agency and inter-jurisdictional environment to align economic development activities and promote information sharing on economic trends, business cycles, best practices, and resources.
	Policy ED 6.2: Analyze emerging trends for policy modification, and maintain and update accurate labor force, market trends, and other important economic data.
	Policy ED 6.3: Strengthen cooperation with private sector organizations, economic development organizations, and community level business groups.

V. Economic Development Element Implementation Programs

- Economic Development Incentives Program
- Economic Development Outreach and Coordination Initiative
- Economic Development Land Use Strategy

For descriptions of these programs, please refer to Chapter 16: General Plan Implementation Programs.

[Text Box]

Economic Development Partners

The Los Angeles County Economic Development Corporation (LAEDC) was established in 1981 by the County as a public-private partnership with the mission to attract, retain, and expand businesses and jobs. The LAEDC publishes semi-annual economic forecasts, and informs economic development by compiling data and research from a variety of sources, and providing analyses of key employment sectors and sub-regions of economic activity. More information on LAEDC can be found on their web site, located at http://www.laedc.org.

Part III: General Plan Implementation

Chapter 15: General Plan Maintenance

I. General Plan Annual Progress Report

Section 65400 of the Government Code requires that the County prepare a general plan annual progress report (annual report) on the status of General Plan implementation. The annual report is prepared by the Department of Regional Planning (DRP), presented to the Los Angeles County Regional Planning Commission and the Board of Supervisors, and submitted to the California Office of Planning and Research and the California Department of Housing and Community Development by April 1 of each year.

The annual report is the County's mechanism for comprehensively reporting on the following: 1) program implementation; 2) effectiveness of major policies; 3) updates to datasets; and 4) map maintenance.

1. Program Implementation

The annual report shall outline the County's progress toward implementing the General Plan implementation programs. A description of milestones, accomplishments, as well as any impediments will be included for each program.

2. Effectiveness of Major Policies

The annual report shall include information on the effectiveness of major policies. The table below outlines the monitoring strategy:

Policy Area	Monitoring Method
Transit Oriented Districts (TODs)	Report annually on the progress of the TODs. Include: • A summary of new development within the TODs approved by DRP, including mixed-use projects; and • A summary of infrastructure improvements, including but not limited to pedestrian, bicycling, and streetscape improvements.
Significant Ecological Areas (SEAs)	Report biennially on the status of the County's SEAs. Include: • A summary of new development within SEAs approved by DRP; • The overall status of biological functions within each SEA, if known; • Any additional scientific studies undertaken on SEAs; • Recommendations for any modifications to the SEA Program, including General Plan goals and policies and the SEA Ordinance; • Identification of lands within individual SEAs as priority habitats or areas for protection; • A description of any ongoing partnerships with conservation agencies and

	other stakeholders; • A current map of SEA lands that are protected in perpetuity through deed-restrictions, conservation easements, etc.; and • The Director's conclusion as to the overall successes and challenges of the SEA Program in implementing General Plan goals and policies.
Employment Protection Districts (EPDs)	Report annually on the progress of the EPDs. Include: • A summary of new development within the EPDs approved by DRP, including new industrial uses, as well as an analysis on the conversion of any industrial lands to non-industrial uses.
Agricultural Resource Areas (ARAs)	Report annually on the progress of the ARAs. Include: • A summary of new development within the ARAs approved by DRP, including an analysis on the reduction or expansion of agricultural uses in the ARAs; • A comparison of the agricultural land uses countywide based on data from the California Department of Conservation and the Los Angeles County Agricultural Commissioner/Weights and Measures; and • Recommendations for any modifications to the ARA boundaries.

3. Dataset Updates

The General Plan includes various maps and figures that rely on datasets that are continually updated. The annual report shall outline information on new data that impacts General Plan maps and figures. As new datasets become available, the following maps will be updated administratively:

- Natural Resource Areas
- Seismic and Geotechnical Hazard Zones
- Flood Hazard Zones
- Tsunami Hazard Areas
- Sea Level Rise Impact Areas
- Fire Hazard Severity Zones

The Special Management Areas Policy Map and the Hazard, Environmental and Resource Constraints Map may also be updated administratively, if the changes are a result of new datasets that are applied to the aforementioned maps.

4. Map Maintenance

Lastly, certain policy maps may need to be amended annually to reflect new public lands and open space acquisitions. These changes will require a plan amendment. The annual report will outline plan amendment recommendations to be initiated by the DRP after the completion of the annual report.

The following policy maps will be reviewed annually and updated as needed:

- Land Use Policy Maps: Update based on changes to Public and Semi-Public (P) and Natural Resources (OS-C, OS-PR, OS-NF, OS-BLM, and OS-W) land use categories.

- Open Space Resources Policy Map: Update to reflect new lands that have been dedicated permanently for open space conservation purposes, as well as land acquired for parks and recreation.

II. General Plan Updates

The County shall undergo a comprehensive General Plan Update every 10 years. The General Plan Update shall include a concurrent update to the zoning ordinance and zoning map, as needed, to ensure consistency with the General Plan. The Housing Element and Safety Element shall be updated concurrently, and in accordance with the statutory deadlines specified in the Government Code. Updating a General Plan is a comprehensive process that ensures consistency with other countywide agency plans, and should include stakeholder input.

Chapter 16: General Plan Implementation Programs

I. Introduction

The Government Code requires that upon adoption of a general plan, a planning agency shall "investigate and make recommendations to the legislative body regarding reasonable and practical means for implementing the general plan."

II. Organization

The General Plan programs, outlined below, are organized by General Plan element and are designed to address the overall policy objectives identified in the General Plan. Each program identifies lead and partner agencies; however, they are not exclusive, and new partners can be added, as needed. The programs also include a timeframe and are categorized based on level of priority. The highest priority programs should be initiated within the first two years of the adoption of the General Plan. Programs that are designated as ongoing represent actions that must be addressed on a regular basis for General Plan implementation.

III. Funding

The General Plan programs guide the development of work programs for County departments. They also inform the budget process and will be used to set funding priorities. The schedules and tasks listed in the implementation program are based on adequate funding being secured through a joint effort undertaken by all departments and agencies. If funding is not secured, the implementation steps and/or timeframes may need to be modified. To supplement department budgets, County staff will also work to secure grants, as needed, for program implementation.

Program No.	Program Description	General Plan Goals and Policies	Lead and Partner Agencies	Timeframe
LU-1	**Planning Areas Framework Program** The General Plan serves as the foundation for all community-based plans, such as area plans, community plans, and coastal land use plans. Area plans focus on land use and other policy issues that are specific to the Planning Area. The Planning Areas Framework Program shall entail the completion of an area plan for each of the 11 Planning Areas. Area plans will be tailored toward the unique geographic, demographic, and social diversity of each Planning Area; however, at a minimum, area plans shall be developed using the following guidelines: • Involve major stakeholders, including but not limited to residents, businesses, property owners, County departments, regional agencies, and adjacent cities. • Explore the role of arts and culture, and consider beautification efforts. • Analyze the transportation network, and assess the transportation and community improvement needs. Utilize the street design considerations outlined in the Mobility Element as a tool for street improvements that meet the needs of all potential users, promote active transportation, and address the unique characteristics of the Planning Area. • Review and consider the identified opportunity areas, as appropriate. • Develop a land use policy map that considers the local context, existing neighborhood character, and the General Plan Hazard, Environmental and Resource Constraints Map. • Consider the concurrent development of areawide zoning tools. • Update specific plans and zoning ordinances, as needed, to ensure consistency and plan implementation. At a minimum, each area plan shall consist of the following components: 1) a comprehensive policy document with area-specific elements, as needed, that incorporates community-based plans as chapters; 2) a land use policy map that utilizes the General Plan Land Use Legend;	Land Use Element: Goal LU 2	Lead: DRP Partners: DPW, CEO, DPH, CDC, DPR, Arts Commission, Fire	Years 1-2

	3) a zoning map that is consistent with the area plan; 4) a capital improvement plan developed in partnership with the Department of Public Works (see Planning Area Capital Improvement Plans Program); and 5) an environmental review document that uses the General Plan Programmatic EIR as a starting point to assess the environmental impacts of the area plan. The creation of new community plans will be reserved for those communities in the unincorporated areas that are identified through the area plan process as having planning needs that go beyond the scope of the area plan. Community plans, as well as coastal land use plans, shall be incorporated as chapters of area plans.			
LU-2	**Transit Oriented District Program** Prepare a TOD specific plan, or similar mechanism, for each TOD. The goals of TOD specific plans are to: 1) increase walking, bicycling, and transit ridership and reduce vehicle miles traveled (VMTs); 2) facilitate compact, mixed use development; 3) increase economic activity; 4) facilitate the public investment of infrastructure improvements; and 5) streamline the environmental review process for future infill development projects. The implementation of the TOD Program should, include the following: • Preliminary Research and Analysis: The TOD plans will be informed by the completion of preliminary research and analysis that will analyze existing conditions, parking supply and demand, and infrastructure supply and demand. • Stakeholder Outreach: In addition to the background research and analyses, the TOD plan will be informed by a comprehensive stakeholder outreach strategy. This strategy should consider input from residents and County staff and set priorities for transportation, housing, open space, and public safety. The TOD plan should also consider the local context and existing neighborhood character. • Informed by the preliminary research and stakeholder outreach, the TOD plan should, at a minimum, include the following: • General Plan Land Use Policy Map: Land uses within TODs should support active transportation, discourage automobile use, strategically focus compact development, and encourage a mix of housing types and commercial uses. • TOD plan, which will include: 1. Zoning Amendments: Prepare a zoning consistency analysis and consider both	Land Use Element: Goals LU 4, LU 5; Policies 1.11, 1.12, 1.13, 1.14, 1.15. Mobility Element: Goal M 5 Public Services and Facilities Element: Policy 1.5 Economic Development Element: Policies: 2.5, 2.7, 3.1, 4.4	Lead: DRP Partners: DPW, Metro, Arts Commission, CDC	Years 1-2

	map and text amendments to ensure consistency with the land use policy map. 2. Design Guidelines: Incorporate guidelines applicable to the built environment that promote livability. 3. Mobility Strategy: Identify pedestrian, bicycle, and automobile routes and multimodal connections. Street infrastructure improvements should examine the street design considerations outlined in the Mobility Element. The strategy may also include new cross-sections to encourage active transportation and ensure the safety of all users. This strategy should also incorporate a strategy for parking management. Lastly, explore opportunities to better coordinate light rail, bus, and County shuttle transit services. 4. Economic Development Strategy: Develop a strategy to promote economic development and redevelopment. This should include working with the CDC to attract needed industries and services. 5. Capital Improvement Plan: Identify specific infrastructure improvements (i.e., sewer, transportation, waste management, stormwater, public water, and open space) and outline a financing plan. • California Environmental Quality Act (CEQA) Document: Complete the appropriate CEQA document that will substantially reduce the environmental review needed for subsequent projects, in particular future infill development and public infrastructure projects in the TOD.			
LU-3	**Airport Land Use Compatibility Plans** Develop the County's airport land use compatibility plans.	Land Use Element: Policy LU 6.6	Lead: DRP Partner: DPW	Years 1-2
LU-4	**Growth Management Program** Develop a growth management program for the unincorporated areas that does the following: • Explore the feasibility of implementing a program that uses infrastructure and service levels as a threshold for development and permitting; and • Explore the feasibility of establishing greenbelts or other growth management strategies in urbanized areas.	Land Use Element: Goal LU 3	Lead: DRP Partners: DPW	Years 1-2
LU-5	**Civic Art Program**	Land Use Element: Goal	Lead: Arts	Year 1-2

	The County Civic Art Policy requires certain capital development projects, either wholly or partially funded by the County, to dedicate one percent of the design and construction cost to public art projects on the site. Explore the expansion of this policy, including the cost implications to County capital projects, and support the management of the County's art collection.	LU 9	Commission Partner: CEO	
LU-6	**Transfer of Development Rights Program** • Explore the feasibility of a Transfer of Development Rights (TDR) Program in order to direct growth and development away from valuable open space areas to identified infill areas. • Identify natural resource, rural and agricultural areas, including Agricultural Resource Areas (ARAs), and portions of the Significant Ecological Areas (SEAs) with high priority resources as sending areas. • Identify potential receiving areas, such as TODs and vacant and underutilized sites, in urban areas. • Consider partnering with other local jurisdictions to expand the scope of the TDR Program. Consider establishing a pilot program with the City of Santa Clarita. • Prepare an ordinance that outlines applicability and procedures for the TDR Program. • Establish or identify a County entity to coordinate the sales and transactions of TDR.	Land Use Element: Goals LU 3, LU 4	Lead: DRP Partners: CEO, DPR, Assessor, DPW	Years 3-5
LU-7	**Adaptive Reuse Ordinance** Prepare an Adaptive Reuse Ordinance within the context of, and in compliance with, existing building codes that considers the following: • The conversion of older, economically distressed or historically-significant buildings into multifamily residential developments, live-and-work units, mixed use developments, or commercial uses. • Incentives to expedite the rehabilitation and redevelopment of structures in older communities, and reduce vacant space in commercial areas.	Land Use Element: Policies LU 4.1, LU 4.2 Economic Development Element: Policies ED 4.4, 4.5	Lead: DRP Partner: DPW	Years 3-5

LU-8	**Art and Cultural Resources Program** Explore the feasibility of provisions for incorporating public art and other cultural amenities in new private development. Also examine the development of an in-lieu fee option.	Land Use Element: Goals LU 9	Lead: DRP Partner: Arts Commission	Year 3-5
LU-9	**Community Design Guidelines** Create design guidelines to preserve and enhance the character-defining features of all unincorporated communities.	Land Use Element: Goals LU 9	Lead: DRP Partners: DPW, Arts Commission	Years 6-10
LU-10	**Early Care and Education Program** In conjunction with the goals, strategies and objectives of the Strategic Plan for Child Care and Development for Los Angeles County, as adopted by the County Child Care Planning Committee, and the Child Care Policy Framework, as adopted by the Board of Supervisors: • Prepare an ordinance that considers the following within the unincorporated areas: 1. Barriers due to zoning regulations and costly permit fees. 2. Regulatory and other incentives, based on the conclusions and recommendations of the County's Child Care Planning Committee and other agencies in *The Economic Impact of the Early Care and Education Industry in Los Angeles County*, January 2008. These could include incentives to developers, such as fee reductions, waiver or modification to development standards, and streamlined permit review, to include child care within their projects, particularly within affordable housing developments, mixed use developments and projects that connect child care services to transit corridors. • Develop an education program that includes: 1. Engagement with the development community about the need/demand for child care services. 2. Technical assistance and training to child care providers on the development of child care facilities.	Land Use Element: Policies LU 5.4, 5.5, 5.6 Public Services and Facilities Element: Policies 7.1, 7.2, 7.3 Economic Development Element: Policy ED 2.6	Lead: CEO, Office of Child Care Partners; DRP, LACOE	Years 6-10
LU-11	**Military Operation Areas Overlay Ordinance** Prepare an ordinance to identify, coordinate and assist in resolving potential land use conflicts within military operation areas (MOAs) to ensure that new development is compatible with military operations, safeguard mission training and testing requirements, support military readiness, and enhance safety for military personnel and persons on the ground. The ordinance should consider the following:	Land Use Element: Goal LU 7	Lead: DRP	Years 6-10

	• The establishment of an MOA Overlay in which proposed developments are regulated; • Provisions to ensure that all uses are compatible with military operations within the MOA Overlay; • Review procedures for all proposed development projects within the MOAs that could impact military operations, such as uses that produce electromagnetic interference, frequency spectrum interference, height obstructions, glare, smoke, dust, and steam.			
M-1	**Parking Ordinance** • Prepare a study that assesses the applicability of parking requirements in all unincorporated areas, provides an overview of best practices, and identifies amendments, as needed. • Consider amendments to the Zoning Code to reflect the best new practices in land use and parking requirements.	Mobility Element: Policies M 5.2	Lead: DRP	Years 1-2
M-2	**Community Pedestrian Plans** Prepare Community Pedestrian Plans that consider the following: • The adequacy of pedestrian routes, accommodations, and the need for improvements or additional infrastructure, given the current or future context of particular neighborhoods. • Design guidelines for streets and walking paths in public and private developments. • Connectivity of pedestrian paths to and from schools, public transportation, major employment centers, shopping centers, and government buildings, in order to eliminate gaps in the transportation system. • Special needs populations, including seniors and people with disabilities. • A framework for the development and implementation of Community Pedestrian Plans in the unincorporated areas that considers safety, design, connectivity, and the needs of all users.	Mobility Element: Goal M 1, M 2, M 3	Lead: DPW Partner: DRP	Years 1-2

	• Coordination with the development of the Planning Areas Framework Program and the TOD Program to ensure planning consistency and to promote intermodal transportation connectivity and community livability. • The identification of unincorporated communities with a substantial absence of, and need for, sidewalks. • Construction of pedestrian improvements through the annual road construction program. • The securing of grant program funding to construct pedestrian plan improvements.			
M-3	**Safe Routes to School Program** • Develop Safe Routes to School programs that address pedestrian and bicycle safety for a two-mile radius around all elementary, middle and high school facilities. • Identify low income communities and/or communities with high rates of bike/pedestrian injury and prioritize these for Safe Routes to Schools grants. • Within high priority areas, identify schools in great need of bike/pedestrian improvements. • Submit grant proposals for high priority schools/areas.	Mobility Element: Goals M 1, M 2	Lead: DPW Partner: DPH	Years 3-5
M-4	**Multimodal Transportation Planning Function** Develop a multimodal transportation planning function for the County. This planning function will be based on traffic modeling activities, which integrate the Highway Plan, Bikeway Master Plan, and future Community Pedestrian Plans. The modeling effort will allow the County to plan, design, and maintain transportation facilities in the unincorporated areas, which provide safe and efficient mobility for all users, including bicyclists, pedestrians, transit vehicles, trucks, and motorists.	Mobility Element: Goal M 4	Lead: DPW Partner: DRP	Years 3-5
AQ-1	**PACE Financing Program** Pursuant to AB 811, establish a countywide property assessed clean energy (PACE) financing program to provide municipal financing for energy and water efficiency and renewable energy projects on private property.	Air Quality Element: Policies AQ 3.2, AQ 3.3 Public Services and Facilities Element: Policy 6.5	Lead: ISD	Years 1-2

		Economic Development Element: Policy ED 1.2		
C/NR-1	**SEA Preservation Program** Coordinate with programs for the preservation of natural resources, especially programs that identify financial incentives for the acquisition of SEA lands. Focus on targeting the following implementation actions to ensure that SEAs are specifically included: • Transfer of Development Rights Program • Habitat Conservation Plan • Mitigation Land Banking Program • Open Space Land Acquisition Strategy	Conservation and Natural Resources Element: Goal C/NR 3, Policy C/NR 3.2	Lead: DRP	Years 1-2
C/NR-2	**Mitigation Land Banking Program** Study the feasibility of creating a Mitigation Land Banking Program with appropriate standards and criteria to allow eligible projects to purchase land within SEAs or other biologically sensitive areas as a mitigation measure for development in areas outside of SEAs. Encourage mitigation banking across watershed and jurisdictional boundaries to provide more opportunities for mitigation, and avoid the creation of "orphan mitigation banks."	Conservation and Natural Resources Element: Goal C/NR 3, Policy C/NR 3.2	Lead: DRP Partner: CEO, DPR, DPW, DPH, DBH, Agricultural Commissioner	Years 1-2
C/NR-3	**Oak Woodlands Conservation Management Plan Implementation** Participate in the preparation of an Oak Woodlands Conservation Management Plan, and an implementing ordinance, which shall consider the regional efforts undertaken to inform the conservation of the County's Oak Woodlands. Implement the County's Oak Woodlands Conservation Management Plan through the following actions: • Create a guidance document that outlines how development projects affecting oak woodlands will be processed, mitigated, and monitored, and provide this document to staff, applicants, and the general public; • Develop a process for documenting oaks that are added by a property owner ("volunteer oaks") as part of the Zoning Ordinance Update Program; and	Conservation and Natural Resources Element: Goal C/NR 4, Policies C/NR 3.4, C/NR 4.1 Safety Element: Goal S 3, Policy S 3.10	Lead: DRP Partners: DPW, Fire	Years 1-2

	• Work with the Los Angeles Region Imagery Acquisition Consortium to lobby for the inclusion of infrared imagery acquisition that will help document existing oak woodlands.			
C/NR-4	**Scenic Resources Ordinance** • Prepare a Scenic Resources Ordinance that creates a scenic corridor, scenic viewshed, and significant ridgeline program and/or ordinance to protect remaining scenic resources. • Develop countywide ridgeline protection regulations and a countywide ridgeline map.	Conservation and Natural Resources Element: Goal C/NR 13	Lead: DRP	Years 1-2
C/NR-5	**Agricultural Resource Areas Ordinance** • Prepare an Agricultural Resource Areas Ordinance in order to encourage the retention and sustainable utilization of agricultural land for agricultural uses. • Analyze the feasibility of offering incentives, such as density bonuses and/or conservation subdivisions, that deed-restrict a certain percentage of the project site for open space and agricultural uses only. • Ensure compatibility between agricultural and non-agricultural land uses through buffering, development standards, and design requirements.	Conservation and Natural Resources Element: Goal C/NR 8 Economic Development Element: Policy ED 1.4 and Policy ED 2.9	Lead: DRP	Years 1-2
C/NR-6	**Mineral Resource Areas Ordinance** Prepare a Mineral Resource Areas Ordinance that considers the following: • Develop regulations for development in Mineral Resource Areas to ensure that development projects are compatible with existing or potential mineral resource areas, and are designed to maintain the future development of extractive, surface mining or energy production; and • Develop standards and conditions for extractive surface mining facilities.	Conservation and Natural Resources Element: Goals C/NR 10, C/NR 11	Lead: DRP	Years 1-2
C/NR-7	**Native Vegetation Conservation Ordinance** Prepare a Native Vegetation Conservation Ordinance that considers the following:	Conservation and Natural Resources Element: Policies C/NR 3.1, C/NR 13.4	Lead: DRP Partners: DPW, Fire, Agricultural	Years 3-5

	• Standards for the removal of native vegetation; • Standards for incorporating native vegetation into development projects; • Standards for reduction of practices that favor invasive species; and • Policies that encourage the active removal of invasive species (i.e., mitigation or other similar credits for removal of invasive species).		Commissioner	
C/NR-8	**Habitat Conservation Plan** Prepare a Habitat Conservation Plan to identify and preserve biologically sensitive land and natural resources, including SEAs. The Habitat Conservation Plan shall include the following: • A review of best practices in Habitat Conservation Plans in other local jurisdictions; and • A dedicated permanent source of funding for natural area conservation and preservation related efforts, including the routine study of biological resources.	Conservation and Natural Resources Element: Goal C/NR 3	Lead: DRP Partner: CEO, DPR, DPW, DPH, DBH, Agricultural Commissioner	Years 3-5
C/NR-9	**Water Quality Initiatives** • Support multi-benefit outcomes, such as water quality benefits arising from ecosystem restoration efforts, and identify, attract, and create funds and resources to implement this initiative. • Participate in Enhanced Watershed Management Programs and Watershed Management Programs in coordination with other agencies throughout Los Angeles County. • Participate in Coordinated Integrated Watershed Monitoring Plans in coordination with other agencies throughout Los Angeles County.	Conservation and Natural Resources Element: Goals C/NR 5, C/NR 6, C/NR 7	Lead: DPW Partners: DPH, DBH	Years 3-5
C/NR-10	**Watershed and Rivers Master Plans** • Participate with stakeholders in the preparation of Watershed Management Plans in response to the NPDES Municipal Separate Storm Sewer Systems (MS4) Permit by promoting multi-benefit outcomes, including, but not limited to new public access to natural resources, new recreational opportunities, enhanced aquatic habitats, and restored natural features, where appropriate, while maintaining necessary levels of	Conservation and Natural Resources Element: Goals C/NR 5, C/NR 6, C/NR 7	Lead: DPW Partner: DBH, DPR, CEO	Years 3-5

	flood protection. • Identify, attract, and create funds and resources to implement these plans.			
C/NR-11	**Urban Greening Program** • Work with the CDC and other stakeholders to expand community garden programs, and to identify County-owned parcels and other potential sites for community gardens. • Create and implement an urban farming program. • Conduct a tree inventory to identify tree deficient neighborhoods and target these areas for tree distribution and planting. • Adopt tree planting requirements for new developments, as described in the Community Climate Action Plan. • Explore joint-use agreements for green amenities for land under major utility corridor line easements. • Amend the County Code, as applicable, to require 30 percent tree canopy coverage, at maturity, on new development to shade parking lots and structures in a manner that will reduce the urban heat island effect. • Work with other jurisdictions to leverage County resources in ways that facilitate environmental improvements consistent with natural landscape characteristics.	Mobility Element: Policy M 2.9 Air Quality Element: Policy AQ 3.6 Conservation and Natural Resources Element: Policy C/NR 9.4	Lead: DRP Partners: DPW, DPR, CDC, Fire, CEO, Utilities, UC Cooperative Extension	Years 3-5
C/NR-12	**Open Space Land Acquisition Strategy** Develop an open space land acquisition strategy that incorporates collaborative partners; identifies multi-use sites; explores all means of open space acquisition and preservation, such as inter-jurisdictional land swaps, mitigation banking, and other partnerships; and implements legal protections, such as deed-restrictions and easements. Develop programs to improve education, awareness, and stewardship of open spaces, natural areas and SEAs, recognizing and prioritizing opportunities to leverage County resources with those of other jurisdictions (such as when environmental improvements cross jurisdictions, but result in amplified improvements consistent with natural landscape boundaries/characteristics).	Conservation and Natural Resources Element: Goals C/NR 1,C/NR 2	Lead: DPR Partner: DRP, DPW	Years 6-10

C/NR-13	**Healthy and Sustainable Food Systems Ordinance** Perform an assessment of the food system in unincorporated areas to identify communities that lack access to healthy foods, barriers to the development of markets that support healthy food access, and opportunities to promote greater connectivity between local food sources and communities. Analyze the feasibility of urban agriculture incentive zones, which would provide a property tax incentive for dedication of vacant, unimproved or blighted urban infill properties to agriculture for a specified period. Prepare a Healthy and Sustainable Food Systems Ordinance that considers the following: • Incentives to promote healthy and sustainable farming practices, such as organic farming and hydroponics. • Identification and implementation of strategies and incentives to increase the availability of healthy and local foods in communities, especially those with limited access to fresh produce.	Conservation and Natural Resources Element: Goals C/NR 8, C/NR 9	Lead: DRP Partner: DPH, Agricultural Commissioner, UC Cooperative Extension	Years 6-10
C/NR-14	**Solar Energy Orientation Study** Prepare a Solar Energy Orientation Study that includes the following: • The feasibility of requiring the optimization of solar orientation in developments to maximize passive and active solar techniques, • Guidelines for reducing the urban heat island effect in new and existing development. • A solar energy subdivision design manual that depicts passive and active solar energy design guidelines.	Land Use Element: Goal LU 10 Air Quality Element: Policy AQ 3.1.	Lead: DRP	Years 6-10
P/R-1	**County Parks and Recreation Master Plan** • Develop a comprehensive Los Angeles County Parks and Recreation Master Plan in collaboration with partner agencies, community groups and other stakeholders. The Master Plan will include a needs and demands analysis, in-depth gap analysis, evaluation of existing facilities and programs, asset management strategies, and implementation actions, including:	Parks and Recreation Element: Goals P/R 1, P/R 2, P/R 3	Lead: DPR Partner: DRP	Years 1-2

	• Park Inventories: Carry out repairs and improvements to existing parks based on the priority established in the park facility inventories. Access related improvements, including upgrades to comply with the Americans with Disabilities Act (ADA), are a priority. As County parks may be used to operate Mass Care Shelters in a major disaster, these shelters must be accessible to persons with disabilities. Compile an inventory of historical resources at all County parks and recreational facilities, including facilities that are listed or eligible to be included on the state and/or national Register of Historic Places. Improve and enhance educational, informational, and regulatory signage at County parks and recreational facilities, as appropriate. • New Park Opportunities: Identify properties that may be suitable for the development of new parks and expansion of existing parks. Study the possibility of developing multi-benefit parks and trails in areas, such as floodway channels, power line alignments, major water and sewer easements, flood basins and impoundment areas, and transportation rights of way. In addition, evaluate opportunities to develop parks and recreation facilities on brownfields following appropriate cleanup and remediation. • Policy Development: Draft a countywide policy to require developers of large residential projects to develop new public parks. Survey and mark the boundaries of County-owned wildlife and wildflower sanctuaries to address encroachment by adjacent property owners. Pursue local, state, and/or federal historical registration and/or museum accreditation of additional County parks and recreational facilities, where appropriate. • Land Acquisition Strategy: Develop a land acquisition strategy as a component of the Master Plan that will establish a framework for evaluating land acquisition priorities, identify funding options for acquisitions, and provide a five-year implementation plan for land acquisition. • Program Development: Expand the park volunteer program and actively recruit more youth and seniors to conduct recreation programs and services, and identify additional facilities where historical and natural resource programs may be offered. • Parks Maintenance Master Plan: Develop a Parks Maintenance Master Plan and a computerized maintenance reporting and tracking system to ensure that routine maintenance and operations of County parks and recreational facilities are carried out in a timely, efficient, and sustainable manner. The Maintenance Master Plan will establish benchmarks for all routine park maintenance tasks and future goals based on national standards.			

	• Revenue Enhancement: Pursue a variety of initiatives to generate additional revenues for parks and recreation including: expanding the Adopt-a-Park program, soliciting donations and sponsorships, applying for grants, and holding more fundraising activities and events.			
P/R-2	**Trails Program** • Develop a Trails Master Plan as a component of the Parks and Recreation Master Plan in collaboration with other public, non-profit, and private organizations. As part of the Master Plan, create a GIS layer of existing and proposed city, County, regional, state, and federal trails and trail segments to identify gaps and opportunities for linkages. • Collaborate with state and federal park agencies to develop uniform trail maintenance standards and trail use regulations. • Prepare and release an official map of County multi-use trails for all users. • Design and develop a new countywide uniform trail signage program that provides identification, by creating an overall branding to unify DPR's signs, along with directional and regulatory information.	Parks and Recreation Element: Goal P/R 4	Lead: DPR Partner: DRP	Years 1-2
P/R-3	**Parks Sustainability Program** Implement the County's Energy and Environmental Policy at County parks, including the following programs: • Leadership in Energy and Environmental Design (LEED) certification (or other equivalent energy certified ratings) for all new buildings of 10,000 square feet, which is the County's Board-approved policy. DPR will also pursue LEED-EB (Existing Buildings) certification for certain existing buildings on park properties by addressing whole building cleaning and maintenance issues (including chemical use), recycling programs, exterior maintenance programs, and systems upgrades. • Energy and Water Efficiency Program: This program seeks to further reduce energy and water consumption at County parks by establishing specific reduction targets and a formal reporting process to measure DPR's progress towards these targets. Recommended initiatives include the implementation of conservation monitoring practices, and energy and water efficiency projects in existing County parks. • Environmental Stewardship Program: Aims to reduce DPR's environmental footprint	Parks and Recreation Element: Goal P/R 6	Lead: DPR Partner: ISD	Years 3-5

	including, among other impacts, air pollutants that are produced through direct and indirect DPR operations, increase the use of environmentally-friendly products, and expand its recycling, composting, and mulching programs. • Sustainable Design Program: Provides for the integration of sustainable, green building technologies into the designs of park improvement and refurbishment projects, seeks to extend the life cycle or useful life of buildings on County parks, and maximize energy and water use efficiency. Establish and implement guidelines for the operation, design, and development of existing and new park facilities that will meet the needs of communities, while minimizing impacts to the natural environment. The guidelines will address a variety of issues, including but not limited to the following: • Systems design that promotes efficient use of water and energy; • Landscape design that uses drought-tolerant plants and native plants, where appropriate; • The use of construction material with recycled content; • The reduction of waste during construction and occupancy; • The use of construction materials with reduced or no release of harmful gases; • Building design and operation which promote indoor air quality and users' comfort level and productivity; • The installation of efficient plumbing fixtures to reduce potable water use and lower production of waste water; and • The purchase of sustainable cleaning materials and building maintenance products.			
N-1	**Countywide Noise Assessment Survey/County Noise Ordinance Update** • Identify major sources of noise and noise issues in the County (Countywide Assessment Survey) • Revise the County's Noise Ordinance, update the vibration standard.	Noise Element: Goal N 1	Lead: DPH Partner: DRP, DPW	Years 1-2

N-2	**Countywide Noise Mapping** If determined to be feasible, prepare a map of detailed noise contours and associated land uses within the County.	Noise Element: Goal N 1	Lead: DPH Partner: DRP	Years 6-10
N-3	**Noise Abatement Program** Create guidelines to mitigate noise issues in development projects and at a countywide level. Plan transportation/parking features to have minimal noise impacts to natural resources.	Noise Element: Goal N 1	Lead: DPH Partner: DRP	Years 6-10
S-1	**Wildland Fire Hazards Ordinance** Study the feasibility of preparing a Wildland Fire Hazards Ordinance that does the following: • Evaluates the feasibility of a Wildland Urban Interface Regulatory Overlay District, which includes all lands within the Very High Fire Hazard Severity Zones. This overlay would provide DRP with the ability to collaborate with the Fire Department to determine the appropriate actions and proportional levels of firefighting services that are required to further protect lives and property within the overlay district. • Develops standards to address design, siting, aspect, fuels, and proximity to hazardous topography, and tools to analyze the various hazards that contribute to wildfire severity; • Evaluates current procedures and regulations that are applicable to Very High Fire Hazard Severity Zones, including disaster routes, road widths, clearances around structures, and water supplies; and • Identifies possible improvements and amend the County Code accordingly for projects in Very High Fire Hazard Severity Zones. • Identify and develop management plans for invasive plant species that increase fire risk in the overlay district.	Safety Element: Goal S 3	Lead: DRP, Fire Partners: DPW, CEO, County Counsel, Agricultural Commissioner, U.S. Forest Service	Years 1-2
S-2	**Debris Management Plan** Prepare a Debris Management Plan to address the mass removal of debris that could result from a major disaster.	Safety Element: Goal S 4	Lead: DPW and OEM	Years 3-5

S-3	**At-Risk Properties Hazard Fund and Strategies** • Identify at-risk properties in hazard areas, such as those on FEMA's repetitive loss properties list. • Research available funding sources to retrofit existing structures that are located in hazard areas.	Safety Element: Goals S 1, S 2, S 3	Lead: DPW Partner: CEO, DRP, DPH	Years 6-10
S-4	**Floodplain Management Plan Implementation and Update** • Distribute and advocate the County's Floodplain Management Plan, which focuses on flood hazard mitigation for repetitive loss properties in the County's unincorporated areas. • Update the Floodplain Management Plan on its five-year cycle to address any additional or reduction of repetitive loss properties.	Safety Element: Goal S 2	Lead: DPW	Ongoing
PS/F-1	**Planning Area Capital Improvement Plans** DRP and DPW to jointly secure sources of funding and set priorities for preparing studies to assess infrastructure needs for the 11 Planning Areas. Once funding has been secured and priorities have been set, prepare a Capital Improvement Plan for each of the 11 Planning Areas (see also Planning Areas Framework Program). Each Capital Improvement Plan shall include the following: Sewer Capacity Study; Transportation System Capacity Study; Waste Management Study; Stormwater System Study; Public Water System Study; list of necessary infrastructure improvements; Implementation Program; and Financing Plan. As applicable, studies related to water, sewer, and stormwater management should specifically address the needs of the unincorporated legacy communities identified in the Land Use Element.	Mobility Element: Goal M 3 Public Services and Facilities Element: Goal PS/F 1 Economic Development Element: Policy ED 3.1	Leads: DPW and DRP	Years 1-2

PS/F-2	**Water Conservation Ordinance** • Continually review and update the County's water conservation ordinance with appropriate enforcement procedures, such as instituting a water conservation hotline and other measures. • Study the feasibility of instituting a conservation water rate structure for the Los Angeles County Waterworks Districts that supply water to the unincorporated areas.	Public Services and Facilities Element: Goals PS/F 2, PS/F 3	Lead: DPH Partner: ISD	Years 1-2
PS/F-3	**Agricultural Water Conservation Program** Study the feasibility of creating an agricultural water conservation program, which will increase crop water use efficiency, and reduce water use through conservation and technological advancement in water management.	Public Services and Facilities Element: Goals PS/F 2, PS/F 3	Lead: DRP Partner: Agricultural Commissioner	Years 6-10
ED-1	**Economic Development Incentives Program** • Develop business incentives for infill development, brownfield remediation, and alternative energy production. • Identify federal, state, and local resources to create economic and regulatory incentives in order to attract targeted industries and to promote sustainable development policies. • Create incentives and programs, and seek and apply for grant funding to rehabilitate and upgrade commercial and industrial districts. • Expand and renew the County's incentive zones and districts to better address the need for economic development throughout the County's industrial and commercial areas. • Incentivize services and employment opportunities to revitalize economically distressed areas.	Economic Development Element: Policies ED 1.3, 1.4, 1.7, 3.4, 3.5, 4.1, 4.3, 4.8	Lead: CDC Partner: DRP, CEO, LAEDC	Years 1-2
ED-2	**Economic Development Outreach and Coordination Initiative** • Collect information and develop a benchmarking mechanism on economic and business trends and conditions, in conjunction with the Los Angeles County Economic Development Corporation (LAEDC), real estate professionals, site locator	Economic Development Element: Policies ED 1.3, 1.4, 1.9, 5.1, 5.2, 5.3, 5.4, 5.5, 5.6, 5.7, 5.8, 5.9, 5.10, 5.11,	Lead: CDC Partners: CEO, DRP, LAEDC	Years 6-10

	service providers, and economic development professionals. Determine needs and respond to changes using this information. • Create a web site and related materials that guide developers and the business community through the County planning and permitting process, include information on policies that facilitate infill development and smart growth, and regularly update a site inventory of public land that is available for economic investment and redevelopment opportunities. • Develop sector strategies that emphasize the sustainability of sector-based training initiatives in targeted high growth industries, in conjunction with Los Angeles County Workforce Investment Boards, LAEDC, the state Employment Development Department, the Los Angeles Area Chamber of Commerce, Los Angeles Community College District, Los Angeles Unified School District, Los Angeles County Federation of Labor, and other partners. Inventory existing workforce development programs throughout the County and promote them via the County, Workforce Investment Board, LAEDC, local government, community-based organization and other web sites. • Lead the implementation of coordinated “one-stop” centers (America’s Job Centers of California) that integrate state EDD programs and other county services, while leveraging varied partners to provide a seamless and diversified experience for job-seekers. • Utilize Sector Intermediaries to ensure the County’s workforce services meet the needs of employers in high-growth industry sectors, thereby increasing the number of job-seekers placed into new and living wage occupations and careers. • Support in-school County youth by expanding the number who complete introductory STEM curricula (science, technology, engineering and math) and participate in the Summer Youth Employment Program, while ensuring out-of-school youth receive comprehensive services through AJCCs. • Participate in regional collaborative efforts around economic development between business and universities, colleges, and private training institutes and service providers. • Develop a promotional campaign that targets foreign-owned enterprises in specific industries in order to attract them to establish operations in Los Angeles County. Collaborate with entities, such as the World Trade Association.	5.12, 5.13, 6.1, 6.2, 6.3		

ED-3	**Economic Development Land Use Strategy** • Develop an economic development land use strategy that does the following: • Ensure that the unincorporated areas is competitive for business establishment and expansion, by identifying and addressing regulatory barriers. • Make the planning and entitlement process for economic development activities timely, accountable, customer-driven, and predictable. • Identify opportunities to relocate current residential uses, where feasible, that are surrounded by industrial uses in Employment Protection Districts. • Consider amendments to Title 22 to add development standards to buffer residential and industrial uses. • In key industrial areas, consider the allowance of flexibility in land uses and permitting requirements as a way to incentivize redevelopment of these areas, and establish clear guidelines for development to ensure compatibility.	Land Use Element: Policy 5.9, 5.10, 6.2 Economic Development Element: Policy ED 1.5, 1.6, 2.1, 2.2, 2.3, 2.8	Lead: DRP Partner: CDC, CEO, LAEDC	Years 1-2

Chapter 17: Goals and Policies Summary

Land Use Element Goals and Policies

Goal LU 1: A General Plan that serves as the constitution for development, and a Land Use Policy Map that implements the General Plan's Goals, Policies and Guiding Principles.	
Topic	**Policy**
General Plan Amendments	Policy LU 1.1: Support comprehensive updates to the General Plan, area plans, community plans, coastal land use plans and specific plans.
	Policy LU 1.2: Discourage project-specific amendments to the text of the General Plan, including but not limited to the Guiding Principles, Goals, and Policies.
	Policy LU 1.3: In the review of project-specific amendments to the General Plan, ensure that they support the Guiding Principles.
	Policy LU 1.4: In the review of a project-specific amendment(s) to the General Plan, ensure that the project-specific amendment(s): • Is consistent with the goals and policies of the General Plan; • Shall benefit the public interest and is necessary to realize an unmet local or regional need.
	Policy LU 1.5: In the review of a project-specific amendment(s) to convert OS-C designated lands to other land use designations, ensure that the project-specific amendment(s) does not contribute to the overall loss of open space that protects water quality, provides natural habitats, and contributes to improved air quality.
	Policy LU 1.6: In the review of a project-specific amendment(s) to convert lands within the EPD Overlay to non-industrial land use designations, ensure that the project-specific amendment(s): • Is located on a parcel that adjoins a parcel with a comparable use, at a comparable scale and intensity; • Will not negatively impact the productivity of neighboring industrial activities; • Is necessary to promote the economic value and the long-term viability of the site; and • Will not subject future residents to potential noxious impacts, such as noise, odors or dust or pose significant health and safety risks.
	Policy LU 1.7: In the review of a project-specific amendment(s) to convert lands within the ARAs, ensure that the project-specific amendment(s): • Is located on a parcel that adjoins another parcel with a comparable use, at a comparable scale and intensity; and • Will not negatively impact the productivity of neighboring agricultural activities.

	Policy LU 1.8: Limit the amendment of each mandatory element of the General Plan to four times per calendar year, unless otherwise specified in Section 65358 of the California Government Code.
	Policy LU 1.9: Allow adjustments to the General Plan Land Use Policy Map to follow an adjusted Highway Plan alignment without a General Plan amendment, when the following findings can be met: • The adjustment is necessitated by an adjusted Highway Plan alignment that was approved by the Los Angeles County Interdepartmental Engineering Committee (IEC) in a duly noticed public meeting; • The adjustment maintains the basic relationship between land use types; and • The adjustment is consistent with the General Plan.
Specific Plans	Policy LU 1.10: Require the intensity, density, and uses allowed in a new specific plan to be determined using the General Plan, including the Land Use Policy Map and Land Use Legend.
	Policy LU 1.11: Require a General Plan amendment for any deviation from the intensities, densities, and uses allowed by the General Plan (to apply the appropriate designation from the General Plan Land Use Legend), unless allowances for flexibility are specified in the specific plan.
	Policy LU 1.12: Require development regulations and zoning for new specific plans to be consistent with their corresponding General Plan land use designation.
	Policy LU 1.13: Allow specific plans to include implementation procedures for flexibility, such as development phasing, and redistribution of intensities and uses, as appropriate.
	Policy LU 1.14: Require a specific plan amendment for any deviation from the procedures and policies established by a specific plan.
	Policy LU 1.15: For existing specific plans, which are depicted with an “SP” land use designation, the General Plan Land Use Policy Map shall be amended as part of a comprehensive area planning effort, to identify existing specific plans using the Specific Plan Overlay.
Goal LU 2: Community-based planning efforts that implement the General Plan and incorporate public input, and regional and community level collaboration.	
Topic	**Policy**
Regional and Community-Based Planning Initiatives	Policy LU 2.1: Ensure that all community-based plans are consistent with the General Plan.
	Policy LU 2.2: Ensure broad outreach, public participation, and opportunities for community input in community-based planning efforts.
	Policy LU 2.3: Consult with and ensure that applicable County departments, adjacent cities and other stakeholders are involved in community-based planning efforts.
	Policy LU 2.4: Coordinate with other local jurisdictions to develop compatible land uses.
	Policy LU 2.5: Support and actively participate in inter-jurisdictional and regional planning efforts to help inform community-based planning efforts.

	Policy LU 2.6: Consider the role of arts and culture in community-based planning efforts to celebrate and enhance community character.
	Policy LU 2.7: Set priorities for Planning Area-specific issues, including transportation, housing, open space, and public safety as part of community-based planning efforts.
	Policy LU 2.8: Coordinate with the Los Angeles County Department of Public Works and other infrastructure providers to analyze and assess infrastructure improvements that are necessary for plan implementation.
	Policy LU 2.9: Utilize the General Plan Land Use Legend and the Hazard, Environmental and Resource Constraints Model to inform the development of land use policy maps.
	Policy LU 2.10: Ensure consistency between land use policy and zoning by undergoing a comprehensive zoning consistency analysis that includes zoning map changes and Zoning Code amendments, as needed.
	Policy LU 2.11: Update community-based plans on a regular basis.
	Policy LU 2.12: Community-based plans and existing specific plans shall be updated, as needed, to reflect the General Plan Land Use Legend as part of a comprehensive area planning effort. An exception to this is for coastal land use plans, which are subject to the California Coastal Act and to review by the California Coastal Commission.
Goal LU 3: A development pattern that discourages sprawl and protects and conserves greenfield areas, natural resources, and SEAs.	
Topic	**Policy**
Growth Management	Policy LU 3.1: Protect and conserve greenfield areas, natural resources, and SEAs.
	Policy LU 3.2: Discourage development in areas with environmental resources and/or safety hazards.
	Policy LU 3.3: Discourage development in greenfield areas where infrastructure and public services do not exist.
Goal LU 4: Infill development and redevelopment that strengthens and enhances communities.	
Topic	**Policy**
Infill Development	Policy LU 4.1: Encourage infill development on vacant, underutilized, and/or brownfield sites.
	Policy LU 4.2: Encourage the adaptive reuse of underutilized structures and the revitalization of older, economically distressed neighborhoods.
	Policy LU 4.3: Encourage transit-oriented development with the appropriate residential density along transit corridors and within station areas.
	Policy LU 4.4: Encourage mixed use development along major commercial corridors.

Goal LU 5: Vibrant, livable and healthy communities with a mix of land uses, services and amenities.	
Topic	**Policy**
Community-Serving Uses	Policy LU 5.1: Encourage a mix of residential land use designations and development regulations that accommodate various densities, building types and styles.
	Policy LU 5.2: Encourage a diversity of commercial and retail services, and public facilities at various scales to meet regional and local needs.
	Policy LU 5.3: Support a mix of land uses that promote bicycling and walking, and reduce VMTs.
	Policy LU 5.4: Encourage community-serving uses, such as early care and education facilities, grocery stores, farmers markets, restaurants, and banks to locate near employment centers.
	Policy LU 5.5: Ensure that all households have access to a sufficient supply of quality early care and education and supervised school-age enrichment options for children from birth to age 13.
	Policy LU 5.6: Reduce regulatory and other barriers to early care and education facilities.
	Policy LU 5.7: Direct resources to areas that lack amenities, such as transit, clean air, grocery stores, bikeways, parks, and other components of a healthy community.
	Policy LU 5.8: Encourage farmers markets, community gardens, and proximity to other local food sources that provide access to healthful and nutritious foods.
Employment Generating Uses	Policy LU 5.9: Preserve key industrially designated land for intensive, employment-based uses.
	Policy LU 5.10: Encourage employment opportunities and housing to be developed in proximity to one another.
Goal LU 6: Compatible land uses that complement neighborhood character and the natural environment.	
Topic	**Policy**
Land Use Compatibility	Policy LU 6.1: Reduce and mitigate the impacts of incompatible land uses, where feasible, using buffers and other design techniques.
	Policy LU 6.2: Protect industrial parks and districts from incompatible uses.
	Policy LU 6.3: Protect public and semi-public facilities, including but not limited to major landfills, natural gas storage facilities, and solid waste disposal sites from incompatible uses.
	Policy LU 6.4: Ensure land use compatibility in areas adjacent to military installations and where military operations, testing, and training activities occur.
	Policy LU 6.5: Ensure land use compatibility in areas adjacent to mineral resources where mineral extraction and production, as well as activities related to the drilling for and production of oil and gas, may occur.

	Policy LU 6.6: Ensure airport operation compatibility with adjacent land uses through airport land use plans.
Rural Character	Policy LU 6.7: Protect rural communities from the encroachment of incompatible development.
	Policy LU 6.8: Encourage land uses and developments that are compatible with the natural environment and landscape.
	Policy LU 6.9: Encourage development in rural areas that is compatible with rural community character, preserves open space, conserves agricultural land, and promotes efficiencies in services and infrastructure.
Goal LU 7: Land uses that are compatible with military operations and military readiness, and enhance safety for military personnel and persons on the ground.	
Topic	**Policy**
Military Compatible Uses	Policy LU 7.1: Facilitate the early exchange of project-related information that is pertinent to military operations with the military for proposed actions within MOAs and within 1,000 ft. of a military installation.
	Policy LU 7.2: Evaluate the potential impact of new structures within MOAs to ensure the safety of the residents on the ground and continued viability of military operations within the MOAs. In the review of development within MOAs, consider the following: • Uses that produce electromagnetic and frequency spectrum interference, which could impact military operations; • Uses that release into the air any substance such as steam, dust and smoke, which impair pilot visibility; • Uses that produce light emissions, glare or distracting lights, which could interfere with pilot vision or be mistaken for airfield lighting; and • Uses that physically obstruct any portion of the MOA due to relative height above ground level.
Goal LU 8: Land use patterns and community infrastructure that promote health and wellness.	
Topic	**Policy**
Community Wellness	Policy LU 8.1: Promote community health for all neighborhoods.
	Policy LU 8.2: Encourage patterns of development, such as sidewalks and bikeways that promote physical activity.
	Policy LU 8.3: Encourage patterns of development that increase convenient, safe access to healthy foods, especially fresh produce, in all neighborhoods.
Goal LU 9: Well-designed and healthy places that support a diversity of built environments.	
Topic	**Policy**

Community Design	Policy LU 9.1: Encourage community outreach and stakeholder agency input early and often in the design of projects.
	Policy LU 9.2: Design development adjacent to natural features in a sensitive manner to complement the natural environment.
	Policy LU 9.3: Consider the built environment of the surrounding area in the design and scale of new or remodeled buildings, architectural styles, and reflect appropriate features such as massing, materials, color, detailing or ornament.
	Policy LU 9.4: Promote environmentally-sensitive and sustainable design.
	Policy LU 9.5: Encourage the use of distinctive landscaping, signage and other features to define the unique character of districts, neighborhoods or communities, and engender community identity, pride and community interaction.
	Policy LU 9.6: Encourage pedestrian activity through the following: • Designing the main entrance of buildings to front the street; • Incorporating landscaping features; • Limiting masonry walls and parking lots along commercial corridors and other public spaces; • Incorporating street furniture, signage, and public events and activities; and • Using wayfinding strategies to highlight community points of interest.
	Policy LU 9.7: Promote public spaces, such as plazas that enhance the pedestrian environment, and continuity along commercial corridors with transit or active pedestrian activities.
	Policy LU 9.8: Promote public art and cultural amenities that support community values and enhance community context.
	Policy LU 9.9: Encourage land uses and design that stimulate positive and productive human relations and foster the achievement of community goals.
	Policy LU 9.10: Promote architecturally distinctive buildings and focal points at prominent locations, such as major commercial intersections and near transit stations or open spaces.
	Policy LU 9.11: Facilitate the use of streets as public space for activities that promote civic engagement, such as farmers markets, parades, etc.
	Policy LU 9.12: Discourage gated entry subdivisions (“gated communities”) to improve neighborhood access and circulation, improve emergency access, and encourage social cohesion.
	Policy LU 9.13: Discourage flag lot subdivisions unless designed to be compatible with the existing neighborhood character.
Goal LU 10: Development that utilize sustainable design techniques.	

Topic	Policy
Energy Efficient Development	Policy LU 10.1: Encourage new development to employ sustainable energy practices, such as utilizing passive solar techniques and/or active solar technologies.
	Policy LU 10.2: Support the design of developments that provide substantial tree canopy cover, and utilize light colored paving materials and reflective roofing materials to reduce the urban heat island effect.
	Policy LU 10.3: Encourage development to optimize the solar orientation of buildings to maximize passive and active solar design techniques.
Sustainable Subdivisions	Policy LU 10.4: Encourage subdivisions to utilize sustainable design practices, such as maximizing energy efficiency through lot configuration, maximizing interconnectivity, and utilizing public transit.
	Policy LU 10.5: Prohibit the use of private yards as required open space within subdivisions, unless such area includes active recreation or outdoor activity areas dedicated for common and/or public use.
	Policy LU 10.6: Ensure that subdivisions in VHFHSZs site open space to minimize fire risks from flammable vegetation.
	Policy LU 10.7: Encourage the use of density controlled design techniques to conserve natural resource areas.
	Policy LU 10.8: Encourage sustainable subdivisions that meet green neighborhood standards, such as Leadership in Energy and Environmental Design–Neighborhood Development (LEED-ND).

Mobility Element Goals and Policies

Goal M 1: Street designs that incorporate the needs of all users.	
Topic	**Policy**
Complete Streets	Policy M 1.1: Provide for the accommodation of all users, including pedestrians, motorists, bicyclists, equestrians, users of public transit, seniors, children, and persons with disabilities when requiring or planning for new, or retrofitting existing, roads and streets.
	Policy M 1.2: Ensure that streets are safe for sensitive users, such as seniors and children.
	Policy M 1.3: Utilize industry standard rating systems, such as the Institute for Sustainable Infrastructure (ISI) Rating System, to assess sustainability and effectiveness of street systems for all users.
Goal M 2: Interconnected and safe bicycle- and pedestrian-friendly streets, sidewalks, paths and trails that promote active transportation and transit use.	
Topic	**Policy**
Active Transportation Design	Policy M 2.1: Design streets that accommodate pedestrians and bicyclists, and reduce motor vehicle accidents through a context-sensitive process that addresses the unique characteristics of urban, suburban, and rural communities.
	Policy M 2.2: Accommodate pedestrians and bicyclists, and reduce motor vehicle accidents by implementing the following street designs, whenever appropriate and feasible: • Lane width reductions to 10 or 11 feet in low speed environments with a low volume of heavy vehicles. • Wider lanes may still be required for lanes adjacent to the curb, and where buses and trucks are expected. • Low-speed designs. • Access management practices developed through a community-driven process. • Back in angle parking at locations that have available roadway width and bike lanes, where appropriate.

	Policy M 2.3: Accommodate pedestrians and bicyclists, and reduce motor vehicle accidents by implementing the following intersection designs, whenever appropriate and feasible: • Right angle intersections that reduce intersection skew. • Smaller corner radii to reduce crossing distances and slow turning vehicles. • Traffic calming measures, such as bulb-outs, sharrows, medians, roundabouts, and narrowing or reducing the number of lanes (road diets) on streets. • Crossings at all legs of an intersection. • Shorter crossing distances for pedestrians. • Right-turn channelization islands. Sharper angles of slip lanes may also be utilized. • Signal progression at speeds that support the target speed of the corridor. • Pedestrian push buttons when pedestrian signals are not automatically recalled. • Walk interval on recall for short crossings. • Left-turn phasing. • Prohibit right turn on red. • Signs to remind drivers to yield to pedestrians.

	Policy M 2.4: Ensure a comfortable walking environment for pedestrians by implementing the following, whenever appropriate and feasible: • Designs that limit dead-end streets and dead-end sidewalks. • Adequate lighting on pedestrian paths, particularly around building entrances and exits, and transit stops. • Designs for curb ramps, which are pedestrian friendly and compliant with the American Disability Act (ADA). • Perpendicular curb ramps at locations where it is feasible. • Pedestrian walking speed based on the latest standard for signal timing. Slower speeds should be used when appropriate (i.e., near senior housing, rehabilitation centers, etc.) • Approved devices to extend the pedestrian clearance times at signalized intersections. • Accessible Pedestrian Signals (APS) at signalized intersections. • Pedestrian crossings at signalized intersections without double or triple left or right turn lanes. • Pedestrian signal heads, countdown pedestrian heads, pedestrian phasing and leading pedestrian intervals at signalized intersections. • Exclusive pedestrian phases (pedestrian scrambles) where turning volume conflicts with very high pedestrian volumes. • Advance stop lines at signalized intersections. • Pedestrian Hybrid Beacons. • Medians or crossing islands to divide long crossings. • High visibility crosswalks. • Pedestrian signage. • Advanced yield lines for uncontrolled crosswalks. • Rectangular Rapid Flashing Beacon or other similar approved technology at locations of high pedestrian traffic. • Safe and convenient crossing locations at transit stations and transit stops located at safe intersections.

	Policy M 2.5: Ensure a comfortable bicycling environment by implementing the following, whenever appropriate and feasible: • Bicycle signal heads at intersections. • Bicycle signal detection at all signalized intersections. • Wayfinding signage. • Road diet techniques, such as lane narrowing, lane removal, and parking removal/restriction. • Appropriate lighting on all bikeways, including those in rural areas. • Designs, or other similar features, such as: shoulder bikeways, cycle tracks, contra flow bike lanes, shared use paths, buffered bike lanes, raised bike lanes, and bicycle boulevards.
	Policy M 2.6: Encourage the implementation of future designs concepts that promote active transportation, whenever available and feasible.
	Policy M 2.7: Require sidewalks and bikeways to accommodate the existing and projected volume of pedestrian and bicycle activity, considering both the paved width and the unobstructed width available for walking.
	Policy M 2.8: Connect pedestrian and bicycle paths to schools, public transportation, major employment centers, shopping centers, government buildings, residential neighborhoods, and other destinations.
	Policy M 2.9: Encourage the planting of trees along streets and other forms of landscaping to enliven streetscapes by blending natural features with built features.
	Policy M 2.10: Encourage the provision of amenities, such as benches, shelters, secure bicycle storage, and street furniture, and comfortable, safe waiting areas near transit stops.
	Policy M 2.11: Promote the continuity of streets and sidewalks through design features, such as limiting mid-block curb cuts, encouraging access through side streets or alleys, and promoting shorter block lengths.
Goal M 3: Streets that incorporate innovative designs.	
Topic	**Policy**
Innovative Street Design	Policy M 3.1: Facilitate safe roadway designs that protect users, preserve state and federal funding, and provide reasonable protection from liability.
	Policy M 3.2: Consider innovative designs when part of an accepted standard, or when properly vetted through an appropriate engineering/design review, in compliance with all state and federal laws.

	Policy M 3.3: Complete the following studies prior to the implementation of innovative design concepts: • An analysis of the current and future context of the community and neighborhood in which they are proposed; • A balanced assessment of the needs of all users and travel modes (i.e., pedestrian, bicycle, transit, vehicular, and equestrian, where appropriate); • A technical assessment of the operational and safety characteristics for each mode; and • A consistency check with transportation network plans, including the Highway Plan, Bicycle Master Plan, and Community Pedestrian Plans.
	Policy M 3.4: Support legislation that minimizes or eliminates liability associated with the implementation of innovative street designs that accommodate all users.
Goal M 4: An efficient multimodal transportation system that serves the needs of all residents.	
Topic	**Policy**
Transit Efficiency, Multimodal Transportation	Policy M 4.1: Expand transportation options that reduce automobile dependence.
	Policy M 4.2: Expand shuttle services to connect major transit centers to community points of interest.
	Policy M 4.3: Maintain transit services within the unincorporated areas that are affordable, timely, cost-effective, and responsive to growth patterns and community input.
	Policy M 4.4: Ensure expanded mobility and increase transit access for underserved transit users, such as seniors, students, low income households, and persons with disabilities.
	Policy M 4.5: Encourage continuous, direct routes through a connected system of streets, with small blocks and minimal dead ends (cul-de-sacs).
	Policy M 4.6: Support alternative LOS standards that account for a multimodal transportation system.
	Policy M 4.7: Maintain a minimum LOS D, where feasible; however, allow LOS below D on a case by case basis in order to further other General Plan goals and policies, such as those related to environmental protection, infill development, and active transportation.
	Policy M 4.8: Provide and maintain appropriate signage for streets, roads and transit.
	Policy M 4.9: Ensure the participation of all potentially affected communities in the transportation planning and decision-making process.
	Policy M 4.10: Support the linkage of regional and community-level transportation systems, including multimodal networks.
	Policy M 4.11: Improve the efficiency of the public transportation system with bus lanes, signal prioritization, and connections to the larger regional transportation network.

	Policy M 4.12: Work with adjacent jurisdictions to ensure connectivity and the creation of an integrated regional network.
	Policy M 4.13: Coordinate with adjacent jurisdictions in the review of land development projects near jurisdictional borders to ensure appropriate roadway transitions and multimodal connectivity.
	Policy M 4.14: Coordinate with Caltrans on mobility and land use decisions that may affect state transportation facilities.
Travel Demand Management	Policy M 4.15: Reduce vehicle trips through the use of mobility management practices, such as the reduction of parking requirements, employer/institution based transit passes, regional carpooling programs, and telecommuting.
	Policy M 4.16: Promote mobility management practices, including incentives to change transit behavior and using technologies, to reduce VMTs.
Goal M 5: Land use planning and transportation management that facilitates the use of transit.	
Topic	**Policy**
Land Use and Transportation	Policy M 5.1: Facilitate transit-oriented land uses and pedestrian-oriented design to encourage transit ridership.
	Policy M 5.2: Implement parking strategies that facilitate transit use and reduce automobile dependence.
	Policy M 5.3: Maintain transportation right-of-way corridors for future transportation uses, including bikeways, or new passenger rail or bus services.
Transportation Funding	Policy M 5.4: Support and pursue funding for the construction, maintenance and improvement of roadway, public transit, pedestrian and bicycle transportation systems.
	Policy M 5.5: Encourage financing programs, such as congestion pricing, bonding and increasing parking costs, to implement transportation systems and facilities.
Goal M 6: The safe and efficient movement of goods.	
Topic	**Policy**
Goods Movement	Policy M 6.1: Maximize aviation and port system efficiencies for the movement of people, goods and services.
	Policy M 6.2: Support the modernization of aviation systems, including LAX.
	Policy M 6.3: Designate official truck routes to minimize the impacts of truck traffic on residential neighborhoods and other sensitive land uses.
	Policy M 6.4: Minimize noise and other impacts of goods movement, truck traffic, deliveries, and staging in residential and mixed-use neighborhoods.

	Policy M 6.5: Support infrastructure improvements and the use of emerging technologies that facilitate the clearance, timely movement, and security of trade.
	Policy M 6.6: Preserve property for planned roadway and railroad rights-of-way, marine and air terminals, and other needed transportation facilities.
Goal M 7: Transportation networks that minimizes negative impacts to the environment and communities.	
Topic	**Policy**
Environmentally Sensitive Transportation Design	Policy M 7.1: Minimize roadway runoff through the use of permeable surface materials, such as porous asphalt and concrete materials, wherever feasible.
	Policy M 7.2: Encourage the creation of wildlife underpasses and overpasses, fencing, signage, and other measures to minimize impacts to wildlife at junctures where transit infrastructure passes through or across sensitive habitats.
	Policy M 7.3: Encourage the use of sustainable transportation facilities and infrastructure technologies, such as liquid and compressed natural gas, and hydrogen gas stations, ITS, and electric car plug-in ports.
	Policy M 7.4: Where the creation of new or the retrofit of roadways or other transportation systems is necessary in areas with sensitive habitats, particularly SEAs, use best practice design to encourage species passage and minimize genetic diversity losses.
Rural Streets	Policy M 7.5: In rural areas, require rural highway and street standards that minimize the width of paving and the placement of curbs, gutters, sidewalks, street lighting, and traffic signals, except where necessary for public safety.

Air Quality Element Goals and Policies

Goal AQ 1: Protection from exposure to harmful air pollutants.	
Topic	**Policy**
Air Pollutants	Policy AQ 1.1: Minimize health risks to people from industrial toxic or hazardous air pollutant emissions, with an emphasis on local hot spots, such as existing point sources affecting immediate sensitive receptors.
	Policy AQ 1.2: Encourage the use of low or no volatile organic compound (VOC) emitting materials.
	Policy AQ 1.3: Reduce particulate inorganic and biological emissions from construction, grading, excavation, and demolition to the maximum extent feasible.
	Policy AQ 1.4: Work with local air quality management districts to publicize air quality warnings, and to track potential sources of airborne toxics from identified mobile and stationary sources.
Goal AQ 2: The reduction of air pollution and mobile source emissions through coordinated land use, transportation and air quality planning.	
Topics	**Policy**
Air Quality, Land Use, and Transportation	Policy AQ 2.1: Encourage the application of design and other appropriate measures when siting sensitive uses, such as residences, schools, senior centers, daycare centers, medical facilities, or parks with active recreational facilities within proximity to major sources of air pollution, such as freeways.
	Policy AQ 2.2: Participate in, and effectively coordinate the development and implementation of community and regional air quality programs.
Goal AQ 3: Implementation of plans and programs to address the impacts of climate change.	
Topic	**Policy**
Climate Change	Policy AQ 3.1: Facilitate the implementation and maintenance of the Community Climate Action Plan to ensure that the County reaches its climate change and greenhouse gas emission reduction goals.
	Policy AQ 3.2: Reduce energy consumption in County operations by 20 percent by 2015.
	Policy AQ 3.3: Reduce water consumption in County operations.
	Policy AQ 3.4: Participate in local, regional and state programs to reduce greenhouse gas emissions.
	Policy AQ 3.5: Encourage maximum amounts of energy conservation in new development and municipal operations.
	Policy AQ 3.6: Support and expand urban forest programs within the unincorporated areas.

Conservation and Natural Resources Element Goals and Policies

Goal C/NR 1: Open space areas that meet the diverse needs of Los Angeles County.	
Topic	**Policy**
Open Space Preservation and Conservation of Natural Areas	Policy C/NR 1.1: Implement programs and policies that enforce the responsible stewardship and preservation of dedicated open space areas.
	Policy C/NR 1.2: Protect and conserve natural resources, natural areas, and open spaces on park properties.
Open Space Acquisition	Policy C/NR 1.3: Support the acquisition of new available open space areas. Augment this strategy by leveraging County resources in concert with the compatible open space stewardship actions of other agencies, as feasible and appropriate.
	Policy C/NR 1.4: Create an established network of dedicated open space areas that provide regional connectivity, between the southwestern extent of the Tehachapi Mountains to the Santa Monica Mountains, and from the southwestern extent of the Mojave Desert to Puente Hills and Chino Hills.
	Policy C/NR 1.5: Increase and improve access to dedicated open space and natural areas for all users.
	Policy C/NR 1.6: Prioritize open space acquisitions for available lands that contain unique ecological features, streams, watersheds, woodlands, grasslands, and/or offer linkages that enhance wildlife movements and genetic diversity.
Goal C/NR 2: Effective collaboration in open space resource preservation.	
Topic	**Policy**
Open Space Collaboration and Financing	Policy C/NR 2.1: Establish new revenue generating mechanisms to leverage County resources to enhance and acquire available open space and natural areas.
	Policy C/NR 2.2: Encourage the development of multi-benefit dedicated open spaces.
	Policy C/NR 2.3: Improve understanding and appreciation for natural areas through preservation programs and educational facilities.
	Policy C/NR 2.4: Collaborate with public, non-profit, and private organizations to acquire and preserve available open space lands.
Goal C/NR 3: Permanent, sustainable preservation of genetically and physically diverse biological resources and ecological systems including: habitat linkages, forests, coastal zone, riparian habitats, streambeds, wetlands, woodlands and SEAs.	
Topic	**Policy**
Protection of Biological	Policy C/NR 3.1: Conserve and enhance the ecological function of diverse natural habitats and biological resources.

Resources	Policy C/NR 3.2: Create and administer innovative County programs incentivizing the permanent dedication of SEAs and other important biological resources as open space areas.
	Policy C/NR 3.3: Restore significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function—acknowledging the importance of incrementally restoring ecosystem values when restoration is not feasible.
	Policy C/NR 3.4: Conserve and sustainably manage forests and woodlands.
	Policy C/NR 3.5: Ensure compatibility of development in the national forests in conjunction with the U.S. Forest Service Land and Resource Management Plan.
	Policy C/NR 3.6: Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.
	Policy C/NR 3.7: Participate in inter-jurisdictional collaborative strategies that protect biological resources.
Site Sensitive Design	Policy C/NR 3.8: Discourage development in areas with identified significant biological resources, such as SEAs.
	Policy C/NR 3.9: Consider the following in the design of a project that is located within an SEA, to the greatest extent feasible: • Preservation of biologically valuable habitats, species, wildlife corridors and linkages; • Protection of sensitive resources on the site within open space; • Protection of water sources from hydromodification to maintain the ecological function of riparian habitats; and • Placement of the development in the least biologically sensitive areas on the site. • Watershed sensitivity by capturing, treating, retaining, and/or infiltrating storm water flows on site.
	Policy C/NR 3.10: Require that development mitigate 'in-kind' for unavoidable impacts on biologically sensitive areas—onsite or nearby as feasible, but allow flexible off-site application to the benefit of other County SEAs or connectivity among them if onsite is not feasible, and permanently preserve mitigation sites.
	Policy C/NR 3.11: Discourage new development from increasing the urban-wildland interface in undisturbed natural areas through compact design.
	Policy C/NR 3.12: Discourage development to maintain and support the preservation of riparian habitats, streambeds, and wetlands in a natural state, unaltered by grading, fill, or diversion activities.
Goal C/NR 4: Preserved and restored oak woodlands that are conserved in perpetuity with no net loss of existing woodlands.	
Topic	**Policy**

Oak Woodland Preservation	Policy C/NR 4.1: Conserve and sustainably manage oak woodlands.
Goal C/NR 5: Protected and useable local surface water resources.	
Topic	**Policy**
Surface Water Protection	Policy C/NR 5.1: Support the LID philosophy, which seeks to plan and design public and private development with hydrologic sensitivity, including limits to straightening and channelizing natural flow paths, removal of vegetative cover, compaction of soils, and distribution of naturalistic BMPs at regional, neighborhood, and parcel-level scales.
	Policy C/NR 5.2: Require compliance by all County departments with adopted Municipal Separate Storm Sewer System (MS4), General Construction, and point source NPDES permits.
	Policy C/NR 5.3: Actively engage with stakeholders in the formulation and implementation of surface water preservation and restoration plans, including plans to improve impaired surface water bodies by retrofitting tributary watersheds with LID types of BMPs.
	Policy C/NR 5.4: Actively engage in implementing all approved Enhanced Watershed Management Programs/Watershed Management Programs and Coordinated Integrated Monitoring Programs/Integrated Monitoring Programs or other County-involved TMDL implementation and monitoring plans.
	Policy C/NR 5.5: Manage the placement and use of septic systems in order to protect nearby surface water bodies.
	Policy C/NR 5.6: Minimize point and non-point source water pollution.
	Policy C/NR 5.7: Actively support the design of new and retrofit of existing infrastructure to accommodate watershed protection goals, such as roadway, railway, bridge, and other—particularly—tributary street and greenway interface points with channelized waterways.
Goal C/NR 6: Protected and usable local groundwater resources.	
Topic	**Policy**
Groundwater Protection	Policy C/NR 6.1: Support the LID philosophy, which incorporates distributed, post-construction parcel-level stormwater infiltration as part of new development.
	Policy C/NR 6.2: Protect natural groundwater recharge areas and regional spreading grounds.
	Policy C/NR 6.3: Actively engage in stakeholder efforts to disperse rainwater and stormwater infiltration BMPs at regional, neighborhood, infrastructure, and parcel-level scales.
	Policy C/NR 6.4: Manage the placement and use of septic systems in order to protect high groundwater.
	Policy C/NR 6.5: Prevent stormwater infiltration where inappropriate and unsafe, such as in areas with high seasonal groundwater, on hazardous slopes, within 100 feet of drinking water wells, and in contaminated soils.

Goal C/NR 7: Protected and healthy watersheds.	
Topic	**Policy**
Watershed Protection	Policy C/NR 7.1: Support the LID philosophy, which mimics the natural hydrologic cycle using undeveloped conditions as a base, in public and private land use planning and development design.
	Policy C/NR 7.2: Support the preservation, restoration and strategic acquisition of open space to preserve natural streams, drainage paths, wetlands, and rivers, which are necessary for the healthy function of watersheds.
	Policy C/NR 7.3: Actively engage with stakeholders to incorporate the LID philosophy in the preparation and implementation of watershed and river master plans, ecosystem restoration projects, and other related natural resource conservation aims, and support the implementation of existing efforts, including Watershed Management Programs and Enhanced Watershed Management Programs.
	Policy C/NR 7.4: Promote the development of multi-use regional facilities for stormwater quality improvement, groundwater recharge, detention/attenuation, flood management, retaining non-stormwater runoff, and other compatible uses.
Goal C/NR 8: Productive farmland that is protected for local food production, open space, public health, and the local economy.	
Topic	**Policy**
Agricultural Resources	Policy C/NR 8.1: Protect ARAs, and other land identified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance by the California Department of Conservation, from encroaching development and discourage incompatible adjacent land uses.
	Policy C/NR 8.2: Discourage land uses in ARAs, and other land identified as Prime Farmland, Farmland of Statewide Importance, Unique Farmland, and Farmland of Local Importance by the California Department of Conservation, that are incompatible with agricultural activities.
	Policy C/NR 8.3: Encourage agricultural activities within ARAs.
Goal C/NR 9: Sustainable agricultural practices.	
Topic	**Policy**
Sustainable Agricultural Practices	Policy C/NR 9.1: Support agricultural practices that minimize and reduce soil loss, minimize pesticide use, and prevent water runoff from leaching pesticide and fertilizer into groundwater and affecting water, soil, and air quality.
	Policy C/NR 9.2: Support innovative agricultural practices that conserve resources and promote sustainability, such as drip irrigation, hydroponics, organic farming, and the use of compost.
	Policy C/NR 9.3: Support farmers markets, farm stands, and community-supported agriculture.

	Policy C/NR 9.4: Support countywide community garden and urban farming programs.
Goal C/NR 10: Locally available mineral resources to meet the needs of construction, transportation, and industry.	
Topic	**Policy**
Mineral Resource Zone Protection	Policy C/NR 10.1: Protect MRZ-2s and access to MRZ-2s from development and discourage incompatible adjacent land uses.
Goal C/NR 11: Mineral extraction and production activities that are conducted in a manner that minimizes impacts to the environment.	
Topic	**Policy**
Mineral Extraction	Policy C/NR 11.1: Require mineral resource extraction and production activities and drilling for and production of oil and natural gas to comply with County regulations and state requirements, such as SMARA, and DOGGR regulations.
	Policy C/NR 11.2: Require the reclamation of abandoned surface mines to productive second uses.
	Policy C/NR 11.3: Require appropriate levels of remediation for all publicly-owned oil and natural gas production sites based on possible future uses.
	Policy C/NR 11.4: Require that mineral resource extraction and production operations as well as activities related to the drilling for and production of oil and natural gas be conducted to protect other natural resources and prevent excessive grading in hillside areas.
Goal C/NR 12: Sustainable management of renewable and non-renewable energy resources.	
Topic	**Policy**
Energy Resources	Policy C/NR 12.1: Expand the production and use of renewable energy resources.
	Policy C/NR 12.2: Encourage the effective management of energy resources, such as ensuring adequate reserves to meet peak demands.
Goal C/NR 13: Protected visual and scenic resources.	
Topic	**Policy**
Scenic Resource Protection	Policy C/NR 13.1: Protect scenic resources through land use regulations that mitigate development impacts.
	Policy C/NR 13.2: Protect ridgelines from incompatible development that diminishes their scenic value.
	Policy C/NR 13.3: Reduce light trespass, light pollution and other threats to scenic resources.

	Policy C/NR 13.4: Encourage developments to be designed to create a consistent visual relationship with the natural terrain and vegetation.
	Policy C/NR 13.5: Encourage required grading to be compatible with the existing terrain.
	Policy C/NR 13.6: Prohibit outdoor advertising and billboards along scenic routes, corridors, waterways, and other scenic areas.
	Policy C/NR 13.7: Encourage the incorporation of roadside rest stops, vista points, and interpretive displays into projects in scenic areas.
Hillside Management	Policy C/NR 13.8: Manage development in HMAs to protect their natural and scenic character and minimize risks from natural hazards, such as fire, flood, erosion, and landslides.
	Policy C/NR 13.9: Consider the following in the design of a project that is located within an HMA, to the greatest extent feasible: • Public safety and the protection of hillside resources through the application of safety and conservation design standards; • Maintenance of large contiguous open areas that limit exposure to landslide, liquefaction and fire hazards and protect natural features, such as significant ridgelines, watercourses and SEAs.
	Policy C/NR 13.10: To identify significant ridgelines, the following criteria must be considered: • Topographic complexity; • Uniqueness of character and location; • Presence of cultural or historical landmarks; • Visual dominance on the skyline or viewshed, such as the height and elevation of a ridgeline; and • Environmental significance to natural ecosystems, parks, and trail systems.
Goal C/NR 14: Protected historic, cultural, and paleontological resources.	
Topic	**Policy**
Historic, Cultural, and Paleontological Resource Protection	Policy C/NR 14.1: Mitigate all impacts from new development on or adjacent to historic, cultural, and paleontological resources to the greatest extent feasible.
	Policy C/NR 14.2: Support an inter-jurisdictional collaborative system that protects and enhances historic, cultural, and paleontological resources.
	Policy C/NR 14.3: Support the preservation and rehabilitation of historic buildings.
	Policy C/NR 14.4: Ensure proper notification procedures to Native American tribes in accordance with Senate Bill 18 (2004).
	Policy C/NR 14.5: Promote public awareness of historic, cultural, and paleontological resources.

	Policy C/NR 14.6: Ensure proper notification and recovery processes are carried out for development on or near historic, cultural, and paleontological resources.

Parks and Recreation Element Goals and Policies

Goal P/R 1: Enhanced active and passive park and recreation opportunities for all users.	
Topic	**Policy**
Park Programming	Policy P/R 1.1: Provide opportunities for public participation in designing and planning parks and recreation programs.
	Policy P/R 1.2: Provide additional active and passive recreation opportunities based on a community's setting, and recreational needs and preferences.
	Policy P/R 1.3: Consider emerging trends in parks and recreation when planning for new parks and recreation programs.
	Policy P/R 1.4: Promote efficiency by building on existing recreation programs.
Park Management	Policy P/R 1.5: Ensure that County parks and recreational facilities are clean, safe, inviting, usable and accessible.
	Policy P/R 1.6: Improve existing parks with needed amenities and address deficiencies identified through the park facility inventories.
	Policy P/R 1.7: Ensure adequate staffing, funding, and other resources to maintain satisfactory service levels at all County parks and recreational facilities.
	Policy P/R 1.8: Enhance existing parks to offer balanced passive and active recreation opportunities through more efficient use of space and the addition of new amenities.
	Policy P/R 1.9: Offer more lighted playing fields using energy efficient light fixtures where appropriate to extend playing time.
	Policy P/R 1.10: Ensure a balance of passive and recreational activities in the development of new park facilities.
	Policy P/R 1.11: Provide access to parks by creating pedestrian and bicycle-friendly paths and signage regarding park locations and distances.
Goal P/R 2: Enhanced multi-agency collaboration to leverage resources.	
Topic	**Policy**
Collaboration and Financing	Policy P/R 2.1: Develop joint-use agreements with other public agencies to expand recreation services.
	Policy P/R 2.2: Establish new revenue generating mechanisms to leverage County resources to enhance existing recreational facilities and programs.
	Policy P/R 2.3: Build multi-agency collaborations with schools, libraries, non-profit, private, and other public organizations to leverage capital and operational resources.

	Policy P/R 2.4: Utilize school and library facilities for County sponsored and community sponsored recreational programs and activities.
	Policy P/R 2.5: Support the development of multi-benefit parks and open spaces through collaborative efforts among entities such as cities, the County, state, and federal agencies, private groups, schools, private landowners, and other organizations.
	Policy P/R 2.6: Participate in joint powers authorities (JPAs) to develop multi-benefit parks as well as regional recreational facilities.
	Policy P/R 2.7: Increase communication and partnerships with local law enforcement, neighborhood watch groups, and public agencies to improve safety in parks.
Mass Care and Shelters	Policy P/R 2.8: Evaluate and enhance facilities and amenities with respect to alternative use of parks to carry out Mass Care and Shelter operations in the wake of a disaster.
Goal P/R 3: Acquisition and development of additional parkland.	
Topic	**Policy**
Parkland Acquisition and Dedication	Policy P/R 3.1: Acquire and develop additional local and regional parkland to meet the following County standards: 4 acres of local parkland per 1,000 residents in the unincorporated areas and 6 acres of regional parkland per 1,000 residents of the total population of Los Angeles County.
	Policy P/R 3.2: For projects that require zone change approvals, general plan amendments, specific plans, or development agreements, require developers to provide for local and regional parkland above and beyond their Quimby obligations as based on an appropriate nexus study.
	Policy P/R 3.3: Require as a condition of residential subdivision approval that a subdivider create a LLAD to maintain the park.
	Policy P/R 3.4: Provide additional parks in communities with insufficient local parkland as identified through the gap analysis.
	Policy P/R 3.5: Expand the supply of regional parks by acquiring land that would: 1) provide a buffer from potential threats that would diminish the quality of the recreational experience; 2) protect watersheds; and 3) offer linkages that enhance wildlife movements and biodiversity.
	Policy P/R 3.6: Collaborate with other public, non-profit, and private organizations to acquire land for parks.
	Policy P/R 3.7: Pursue a variety of opportunities to secure property for parks and recreational facilities, including purchase, grant funding, private donation, easements, surplus public lands for park use, and dedication of private land as part of the development review process.
Parkland Development	Policy P/R 3.8: Mitigate impacts from freeways to new parks to the extent feasible.
	Policy P/R 3.9: Site new parks near schools, libraries, senior centers and other community facilities where possible.

	Policy P/R 3.10: The Department of Parks and Recreation does not accept undeveloped park sites from developers. Developers are required to provide a developed park to the County on a "turn-key" basis and receive credit for the costs of developing the public park up to and against any remaining Quimby obligation, after accounting for the net acreage dedicated to the County.
Goal P/R 4: Improved accessibility and connectivity to a comprehensive trail system including rivers, greenways, and community linkages.	
Topic	**Policy**
Trail System	Policy P/R 4.1: Create multi-use trails to accommodate all users.
	Policy P/R 4.2: Develop staging areas and trail heads at strategic locations to accommodate multi-use trail users.
	Policy P/R 4.3: Develop a network of feeder trails into backbone trails.
	Policy P/R 4.4: Maintain and design multi-purpose trails in ways that minimize circulation conflicts among trail users.
	Policy P/R 4.5: Collaborate with other public, non-profit, and private organizations in the development of a comprehensive trail system.
	Policy P/R 4.6: Create new multi-use trails that link community destinations including parks, schools and libraries.
Goal P/R 5: Protection of historical and natural resources on County park properties.	
Topic	**Policy**
Park Resource Preservation	Policy P/R 5.1: Preserve historic resources on County park properties, including buildings, collections, landscapes, bridges, and other physical features.
	Policy P/R 5.2: Expand the collection of historical resources under the jurisdiction of the County, where appropriate.
	Policy P/R 5.3: Protect and conserve natural resources on County park properties, including natural areas, sanctuaries, and open space preserves.
	Policy P/R 5.4: Ensure maintenance, repair, rehabilitation, restoration, or reconstruction of historical resources in County parks and recreational facilities are carried out in a manner consistent with the most current Secretary of the Interior's Standards for the Treatment of Historic Properties with Guidelines for Preserving, Rehabilitating, Restoring, and Reconstructing Historic Buildings.
Education and Programming	Policy P/R 5.5: Preserve and develop facilities that serve as educational resources that improve community understanding of and appreciation for natural areas, including watersheds.
	Policy P/R 5.6: Promote the use of County parks and recreational facilities for educational purposes, including a variety of classes and after school programs.

	Policy P/R 5.7: Integrate a range of cultural arts programs into existing activities, and partner with multicultural vendors and organizations.
Goal P/R 6: A sustainable parks and recreation system.	
Topic	**Policy**
Sustainable Parks System	Policy P/R 6.1: Support the use of recycled water for landscape irrigation in County parks.
	Policy P/R 6.2: Support the use of alternative sources of energy, such as wind and solar sources to reduce the use of energy at existing parks.
	Policy P/R 6.3: Prolong the life of existing buildings and facilities on County park properties through preventative maintenance programs and procedures.
	Policy P/R 6.4: Ensure that new buildings on County park properties are environmentally sustainable by reducing carbon footprints, and conserving water and energy.
	Policy P/R 6.5: Ensure the routine maintenance and operations of County parks and recreational facilities to optimize water and energy conservation.

Noise Element Goals and Policies

Goal N 1: The reduction of excessive noise impacts.	
Topic	**Policy**
Reducing Noise Impacts	Policy N 1.1: Utilize land uses to buffer noise-sensitive uses from sources of adverse noise impacts.
	Policy N 1.2: Reduce exposure to noise impacts by promoting land use compatibility.
	Policy N 1.3: Minimize impacts to noise-sensitive land uses by ensuring adequate site design, acoustical construction, and use of barriers, berms, or additional engineering controls through Best Available Technologies.
	Policy N 1.4: Enhance and promote noise abatement programs in an effort to maintain acceptable levels of noise as defined by the Los Angeles County Exterior Noise Standards and other applicable noise standards.
	Policy N 1.5: Ensure compliance with the jurisdictions of State Noise Insulation Standards (Title 24, California Code of Regulations and Chapter 35 of the Uniform Building Code), such as noise insulation of new multifamily dwellings constructed within the 60 dB (CNEL or Ldn) noise exposure contours.
	Policy N 1.6: Ensure cumulative impacts related to noise do not exceed health-based safety margins.
	Policy N 1.7: Utilize traffic management and noise suppression techniques to minimize noise from traffic and transportation systems.
	Policy N 1.8: Minimize noise impacts to pedestrians and transit-riders in the design of transportation facilities and mobility networks.
	Policy N 1.9: Require construction of suitable noise attenuation barriers on noise sensitive uses that would be exposed to exterior noise levels of 65 dBA CNEL and above, when unavoidable impacts are identified.
	Policy N 1.10: Orient residential units away from major noise sources (in conjunction with applicable building codes). Where feasible, exterior walls should have minimal surface openings (i.e.,windows, balconies, sliding doors, etc.) not to exceed 10% of the total wall surface.
	Policy N 1.11: Maximize buffer distances and design and orient sensitive receptor structures (hospitals, residential, etc.) to prevent noise and vibration transfer from commercial/light industrial uses.
	Policy N 1.12: Decisions on land adjacent to transportation facilities, such as the airports, freeways and other major highways, must consider both existing and future noise levels of these transportation facilities to assure the compatibility of proposed uses.

Safety Element Goals and Policies

Goal S 1: An effective regulatory system that prevents or minimizes personal injury, loss of life and property damage due to seismic and geotechnical hazards.	
Topic	**Policy**
Geotechnical Hazards	Policy S 1.1: Discourage development in Seismic Hazard and Alquist-Priolo Earthquake Fault Zones.
	Policy S 1.2: Prohibit the construction of most structures for human occupancy adjacent to active faults until a comprehensive geotechnical study that addresses the potential for fault rupture has been completed.
	Policy S 1.3: Require developments to mitigate geotechnical hazards, such as soil instability and landsliding, in Hillside Management Areas through siting and development standards.
	Policy S 1.4: Support the retrofitting of unreinforced masonry structures to help reduce the risk of structural and human loss due to seismic hazards.
Goal S 2: An effective regulatory system that prevents or minimizes personal injury, loss of life, and property damage due to flood and inundation hazards.	
Topic	**Policy**
Flood Hazards	Policy S 2.1: Discourage development in the County's Flood Hazard Zones.
	Policy S 2.2: Discourage development from locating in dam and reservoir inundation routes.
	Policy S 2.3: Discourage development from locating downslope from aqueducts.
	Policy S 2.4: Consider climate change implications in planning for flood and inundation hazards.
	Policy S 2.5: Ensure that developments located within the County's Flood Hazard Zones are sited and designed to avoid isolation from essential services and facilities in the event of flooding.
	Policy S 2.6: Ensure that the mitigation of flood related property damage and loss does not impact biological and other resources.
	Policy S 2.7: Work cooperatively with public agencies with responsibility for flood protection, and with stakeholders in planning for flood and inundation hazards.
	Policy S 2.8: Locate essential public facilities, such as hospitals and fire stations, outside of Flood Hazard Zones, where feasible.
Goal S 3: An effective regulatory system that prevents or minimizes personal injury, loss of life, and property damage due to fire hazards.	
Topic	**Policy**

Fire Hazards	Policy S 3.1: Discourage development in VHFHSZs, particularly in areas with significant biological resources.
	Policy S 3.2: Consider climate change implications in planning for VHFHSZs.
	Policy S 3.3: Ensure that the mitigation of fire related property damage and loss in VHFHSZs limits impacts to biological and other resources.
	Policy S 3.4: Reduce the risk of wildland fire hazards through the use of regulations and performance standards, such as fire resistant building materials and vegetation.
	Policy S 3.5: Encourage the use of fire resistant vegetation that is compatible with the area's natural vegetative habitats in fuel modification activities.
	Policy S 3.6: Ensure adequate infrastructure, including ingress, egress, and peak load water supply availability for all projects located in VHFHSZs.
	Policy S 3.7: Consider siting and design for developments located within VHFHSZs, particularly in areas located near ridgelines and on hilltops, to reduce the wildfire risk.
	Policy S 3.8: Support the retrofitting of existing structures in VHFHSZs to help reduce the risk of structural and human loss due to wildfire.
	Policy S 3.9: Adopt by reference the County of Los Angeles Fire Department Strategic Fire Plan, as amended.
	Policy S 3.10: Map oak woodlands in Los Angeles County as part of implementation of an Oak Woodlands Conservation Management Plan.
Goal S 4: Effective County emergency response management capabilities.	
Topic	**Policy**
Emergency Response	Policy S 4.1: Ensure that residents are protected from the public health consequences of natural or man-made disasters through increased readiness and response capabilities, risk communication, and the dissemination of public information.
	Policy S 4.2: Support County emergency providers in reaching their response time goals.
	Policy S 4.3: Coordinate with other County and public agencies, such as transportation agencies, and health care providers on emergency planning and response activities, and evacuation planning.
	Policy S 4.4: Encourage the improvement of hazard prediction and early warning capabilities.
	Policy S 4.5: Ensure that there are adequate resources, such as sheriff and fire services, for emergency response.
	Policy S 4.6: Ensure that essential public facilities are maintained during natural disasters, such as flooding.

Public Services and Facilities Element Goals and Policies

Goal PS/F 1: A coordinated, reliable, and equitable network of public facilities that preserves resources, ensures public health and safety, and keeps pace with planned development.	
Topic	**Policy**
Sufficient Infrastructure	Policy PS/F 1.1: Discourage development in areas without adequate public services and facilities.
	Policy PS/F 1.2: Ensure that adequate services and facilities are provided in conjunction with development through phasing or other mechanisms.
	Policy PS/F 1.3: Ensure coordinated service provision through collaboration between County departments and service providers.
	Policy PS/F 1.4: Ensure the adequate maintenance of infrastructure.
	Policy PS/F 1.5: Focus infrastructure investment, maintenance and expansion efforts where the General Plan encourages growth, such as TODs.
	Policy PS/F 1.6: Support multi-faceted public facility expansion efforts, such as substations, mobile units, and satellite offices.
Goal PS/F 2: Increased water conservation efforts.	
Topic	**Policy**
Water Conservation	Policy PS/F 2.1: Implement water conservation measures, such as drought tolerant landscaping and restrictions on water used for landscaping.
	Policy PS/F 2.2: Support educational outreach efforts that discourage wasteful water consumption.
Goal PS/F 3: Increased local water supplies through the use of new technologies.	
Topic	**Policy**
Water Supply	Policy PS/F 3.1: Increase the supply of water though the development of new sources, such as recycled water, gray water, and rainwater harvesting.
	Policy PS/F 3.2: Support the increased production, distribution and use of recycled water, gray water, and rainwater harvesting to provide for groundwater recharge, seawater intrusion barrier injection, irrigation, industrial processes and other beneficial uses.
Goal PS/F 4: Reliable sewer and urban runoff conveyance treatment systems.	
Topic	**Policy**

Sanitary Sewers	Policy PS/F 4.1: Encourage the planning and continued development of efficient countywide sewer conveyance treatment systems.
	Policy PS/F 4.2: Support capital improvement plans to improve aging and deficient wastewater systems, particularly in areas where the General Plan encourages development, such as TODs.
	Policy PS/F 4.3: Ensure the proper design of sewage treatment and disposal facilities, especially in landslide, hillside, and other hazard areas.
	Policy PS/F 4.4: Evaluate the potential for treating stormwater runoff in wastewater management systems or through other similar systems and methods.
Goal PS/F 5: Adequate disposal capacity and minimal waste and pollution.	
Topic	**Policy**
Waste Management	Policy PS/F 5.1: Maintain an efficient, safe and responsive waste management system that reduces waste while protecting the health and safety of the public.
	Policy PS/F 5.2: Ensure adequate disposal capacity by providing for environmentally sound and technically feasible development of solid waste management facilities, such as landfills and transfer/processing facilities.
	Policy PS/F 5.3: Discourage incompatible land uses near or adjacent to solid waste disposal facilities identified in the Countywide Integrated Waste Management Plan.
Waste Diversion	Policy PS/F 5.4: Encourage solid waste management facilities that utilize conversion and other alternative technologies and waste to energy facilities.
	Policy PS/F 5.5: Reduce the County's waste stream by minimizing waste generation and enhancing diversion.
	Policy PS/F 5.6: Encourage the use and procurement of recyclable and biodegradable materials.
	Policy PS/F 5.7: Encourage the recycling of construction and demolition debris generated by public and private projects.
	Policy PS/F 5.8: Ensure adequate and regular waste and recycling collection services.
	Policy PS/F 5.9: Encourage the availability of trash and recyclables containers in new developments, public streets, and large venues.
Goal PS/F 6: A County with adequate public utilities.	
Topic	**Policy**
Utility Infrastructure	Policy PS/F 6.1: Ensure efficient and cost-effective utilities that serve existing and future needs.

	Policy PS/F 6.2: Improve existing wired and wireless telecommunications infrastructure.
	Policy PS/F 6.3: Expand access to wireless technology networks, while minimizing visual impacts through co-location and design.
	Policy PS/F 6.4: Protect and enhance utility facilities to maintain the safety, reliability, integrity and security of utility services.
	Policy PS/F 6.5: Encourage the use of renewable energy sources in utility and telecommunications networks.
	Policy PS/F 6.6: Encourage the construction of utilities underground, where feasible.
	Policy PS/F 6.7: Encourage projects that incorporate onsite renewable energy systems.
	Policy PS/F 6.8: Support the prohibition of public access within, and the limitation of access in areas adjacent to natural gas storage facilities to minimize trespass and ensure security.
Goal PS/F 7: A County with adequate educational facilities.	
Topic	**Policy**
Early Care and Educational Facilities	Policy PS/F 7.1: Encourage the joint-use of school sites for community activities and other appropriate uses.
	Policy PS/F 7.2: Proactively work with school facilities and education providers to coordinate land use and facilities planning.
	Policy PS/F 7.3: Encourage adequate facilities for early care and education.
Goal PS/F 8: A comprehensive public library system.	
Topic	**Policy**
Library System	Policy PS/F 8.1: Ensure a desired level of library service through coordinated land use and facilities planning.
	Policy PS/F 8.2: Support library mitigation fees that adequately address the impacts of new development.

Economic Development Element Goals and Policies

Goal ED 1: An economic base and fiscal structures that attract and retain valuable industries and businesses.	
Topic	**Policy**
Target Industries	Policy ED 1.1: Encourage a diverse mix of industries and services in each Planning Area.
	Policy ED 1.2: Encourage and foster the development of the renewable energy economic sectors.
	Policy ED 1.3: Encourage public-private partnerships to support the growth of target industries.
	Policy ED 1.4: Encourage the expansion and retention of targeted industries and other growth economic sectors, such as the entertainment industry, aerospace industry, agriculture, transportation/logistics, healthcare, biomed/biotech, hospitality and tourism.
County Incentives for Business	Policy ED 1.5: Provide quality, responsible, and business-friendly municipal services to attract and retain businesses and employees.
	Policy ED 1.6: Develop, advance, and promote competitive advantages for economic development and growth.
	Policy ED 1.7: Identify opportunities to lower the costs of doing business in Los Angeles County.
	Policy ED 1.8: Promote Los Angeles County as a national and international center for business, global trade, and development.
Goal ED 2: Land use practices and regulations that foster economic development and growth.	
Topic	**Policy**
Industrial Land	Policy ED 2.1: Protect industrial lands, especially within Employment Protection Districts, from conversion to non-industrial uses.
	Policy ED 2.2: Utilize adequate buffering and other land use practices to facilitate the compatibility between industrial and non-industrial uses.
Business and Environmental Justice	Policy ED 2.3: Ensure environmental justice in economic development activities.
	Policy ED 2.4: Ensure high standards of development and encourage environmentally sustainable practices in economic development activities.
	Policy ED 2.5: Encourage employment opportunities to be located in proximity to housing.
	Policy ED 2.6: Encourage community-serving uses, such as child care centers and personal services, to be located in proximity to employment centers.
	Policy ED 2.7: Incentivize economic development and growth along existing transportation corridors and in urbanized areas.

Streamlined Permit Processing	Policy ED 2.8: Streamline the permit review process and other entitlement processes for businesses and industries.
Agriculture	Policy ED 2.9 Explore zoning incentives for the operation of farms in Agricultural Resource Areas (ARAs).
Goal ED 3: An expanded and improved infrastructure system to support economic growth and development.	
Topic	**Policy**
Infrastructure Improvements	Policy ED 3.1: Utilize capital improvement plans to prioritize infrastructure investments.
	Policy ED 3.2: Support the use of public-private partnerships to develop, fund, and deliver critical infrastructure.
	Policy ED 3.3: Work with state agencies dedicated to financing important critical infrastructure and economic development projects.
Goal ED 4: Enhanced revitalization activities.	
Topic	**Policy**
Economic Development Strategies	Policy ED 4.1: Develop a range of financial incentives and programs that encourage development and business growth.
	Policy ED 4.2: Support the development of community-level economic development strategies in line with the Los Angeles County Strategic Plan for Economic Development.
	Policy ED 4.3: Support the development of small business assistance and entrepreneurial programs that are focused on management, financial planning, and technology application.
Infill Development	Policy ED 4.4: Incentivize infill development that revitalizes underutilized commercial and industrial areas.
	Policy ED 4.5: Direct resources to economically distressed areas to spur revitalization activities.
	Policy ED 4.6: Retrofit and reuse vacant and underutilized industrial and commercial sites for emerging and targeted industries.
	Policy ED 4.7: Support expedited permitting for green building retrofits.
Goal ED 5: A skilled and educated workforce.	
Topic	**Policy**
Education	Policy ED 5.1: Attract and retain highly-skilled graduates, in particular, graduates of science and engineering programs.

	Policy ED 5.2: Support and create collaborative educational programs that address specific under-employed populations and workforce needs in targeted areas.
	Policy ED 5.3: Encourage outreach efforts to educational and community-learning institutions to expand workforce education programs.
	Policy ED 5.4: Expand functional literacy and English as a Second Language (ESL) programs.
	Policy ED 5.5: Support linked programs that align high schools with community colleges and four-year institutions.
	Policy ED 5.6: Engage employers earlier in the education and workforce development process to ensure work-readiness and a smooth transition from school or training to work placement.
Job Training	Policy ED 5.7: Ensure that businesses have enough skilled workers to meet their workforce needs.
	Policy ED 5.8: Prepare, train, and educate job seekers and incumbent workers to find and advance in high-value, high-wage jobs with built-in career ladders.
	Policy ED 5.9: Promote the attraction, retention and expansion of commercial and industrial firms that provide employment improvement opportunities for unskilled and semi-skilled workers.
	Policy ED 5.10: Initiate vocational training programs that provide the skills necessary for participation in the labor force.
	Policy ED 5.11: Collaborate with the private sector to identify growing workforce needs and link training initiatives to the needs of target industries.
	Policy ED 5.12: Establish employer assistance initiatives to expand skilled trades training and vocational education for high demand occupations.
	Policy ED 5.13: Play a leadership role in convening and coordinating the activities of key regional workforce development system stakeholders, including the six other WIBS that operate within Los Angeles County, as well as community colleges, businesses, K-12 institutions, philanthropic partners and others.
Goal ED 6: Collaborative efforts to implement coordinated economic development activities.	
Topic	**Policy**
Coordinated Economic Development	Policy ED 6.1: Encourage a collaborative inter-agency and inter-jurisdictional environment to align economic development activities and promote information sharing on economic trends, business cycles, best practices, and resources.
	Policy ED 6.2: Analyze emerging trends for policy modification, and maintain and update accurate labor force, market trends, and other important economic data.
	Policy ED 6.3: Strengthen cooperation with private sector organizations, economic development organizations, and community level business groups.

LOS ANGELES COUNTY GENERAL PLAN

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Appendix B: Community Participation, General Plan Guiding Principles and Planning Areas Framework

I. Community Participation

Table B.1 summarizes the County's major outreach efforts to engage with stakeholders on the development of General Plan.

Table B.1 General Plan Community and Stakeholder Outreach Summary

General Plan Update Visioning/EIR Scoping (1999-2003)	SEA workshops and community meetings, 1999-2001. General Plan visioning workshops, 2001. EIR scoping meetings, 2003.
Shaping the Future 2025 (2003-2005)	Draft General Plan goals and policies released to the public, December 2003. 2004 Outreach Campaign: • Public release of Shaping the Future 2025. • *Shaping the Future 2025* mailed out to stakeholders. • Draft posted on the Department of Regional Planning's (DRP) web site and mailed out to County libraries. • Community meetings and invited stakeholder meetings.
Preliminary Draft General Plan (2007)	*Preliminary Draft General Plan* released to public, June 2007. 2007 Outreach Campaign: • Postcard announcements, newspaper advertisements, and press release. • Draft posted on DRP's web site and mailed out to County libraries. • Los Angeles County Regional Planning Commission presentation. • Community meetings and invited stakeholder meetings. • County interdepartmental meetings.
Planning Tomorrow's Great Places (2008)	Planning for Tomorrow's Great Places released to the public, July 2008. 2008 Outreach Campaign: • Postcard announcements, newspaper advertisements, and press release.

	• Draft posted on DRP's web site and mailed out to County libraries. • Los Angeles County Regional Planning Commission presentation, September 2008. • Stakeholder meetings. • Board office and interdepartmental meetings. • Poster plan released to the public, January 2009. • Los Angeles County Regional Planning Commission presentation.
Draft General Plan 2035/EIR Scoping (2011)	Draft General Plan 2035 released to the public, April 2011. 2011 Outreach Campaign: • Postcard and email announcements. • Draft posted on the DRP's web site and mailed out to County libraries. • Los Angeles County Regional Planning Commission presentation, May 2011. • Board office and interdepartmental meetings. • EIR scoping meetings, September 2011. • Stakeholder meetings, September to November 2011.
Draft General Plan 2035 (2012)	Draft General Plan 2035 released to the public, May 2012
Draft General Plan 2035 (2013)	Draft General Plan 2035 released to the public, October 2013.

II. Development of the General Plan Guiding Principles

The County developed the General Plan Guiding Principles—Employ Smart Growth; Ensure Sufficient Community Services and Infrastructure; Provide the Foundation for a Strong and Diversified Economy; Excellence in Environmental Resource Management; and Provide Healthy, Livable and Equitable Communities—to reflect the broadly expressed needs, concerns, and aspirations of residents and stakeholders. The following issues were identified as important topics to be addressed in the General Plan:

Promote a Strong and Diversified Economy

- Provide a wide range of investment opportunities and job choices so that Los Angeles County is less vulnerable to the harmful consequences of economic recessions.

- Provide an adequate supply of land suitable for industry and commerce to ensure a diversified and strong economy.

- Increase training efforts to better prepare the workforce for future industries.

Promote Fiscal, Environmental, and Social Sustainability

- Meet the needs of the current generation without compromising the ability of future generations to meet their needs.

- Encourage practices that maximize user benefit, minimize waste and redundancy, and consistently promote the revitalization, restoration, and enhancement of the built, natural, and social environments.

- Promote the conservation of energy and other valuable natural resources as a basic principle in all planning activities.

Promote Revitalization of Urban Areas

- Direct development opportunities to areas most in need of economic investment.

- Emphasize code enforcement as a means to spur urban redevelopment in economically depressed areas.

Provide Affordable Housing

- Build and maintain a diversity of decent housing at an affordable price.

Provide for Adequate Community Services and Facilities

- Maintain roadways and regulate land uses.

- Provide community services and facilities, such as schools, parks, and libraries that play a significant role in the enrichment of the public consciousness.

- Develop a sense of place for the many neighborhoods within the unincorporated communities of Los Angeles County.

- Ensure proficient emergency service and infrastructure coverage, such as fire protection and wastewater systems, which are necessary for the health and safety of residents and visitors.

- Increase community services, such as daycare and job training centers.

Promote Multimodal Transportation Alternatives and an Efficient Transportation System

- Maintain and maximize the efficiency of the County highway and road network system by integrating and promoting alternative forms of transportation, such as rail, bus, and biking.

- Improve the freight and highway systems for the safe and efficient movement of goods.

- Protect rural communities and rural lifestyles.
- Maintain the unique character and development patterns of unincorporated rural communities.

Conserve Water and Protect its Quality

- Develop and promote strong conservation efforts and preserve land for the natural recharge of groundwater, which is essential to ensure an ongoing adequate supply of quality water.
- Promote the development of a countywide recycled water system.

Protect the Natural Environment, Natural Resources, and Conserve Open Space

- Maintain and protect natural resources, such as clean air and water, wildlife habitat areas, mineral resource areas, agricultural land, national forest land, parks and open space areas, and recreational areas.
- Preserve open space areas that provide valuable recreational, scenic and biological resources for residents.
- Acquire open space and limit development in rural areas.
- Address the regional issue of air quality, which is important in maintaining a high quality of life for residents.

Protect Against Natural and Manmade Hazards

- Create programs to provide current and improved hazard-related information, and strengthen development review procedures and standards.

III. Development of Planning Areas Framework

The Planning Areas Framework for the General Plan was developed using the following sources:

- SCAG subregional boundaries for Los Angeles County;
- Census tract boundaries;
- LAFCO Municipal Service Review areas;
- City and unincorporated community boundaries;
- Physical and geographic boundaries;
- Stakeholder input; and
- Subregional planning initiatives and planning issues.

Appendix C: Land Use Element Resources

I. Hazard, Environmental and Resource Constraints Model

The purpose of the Hazard, Environmental and Resource Constraints Model is to inform the land use policy direction of future community-based planning initiatives, as well as other land use policies, regulations and procedures. In addition, it is a tool to inform stakeholders of potential site constraints and regulations. The Model uses three classifications, which are defined as follows:

- Class I: Land that has minimal hazard, environmental and resource constraints.
- Class II: Land that has moderate hazard, environmental and resource constraints.
- Class III: Land that has severe hazard, environmental and resource constraints.

Figure C.1 is a visual representation of the Hazard, Environmental and Resource Constraints Model. The Model does not represent the constraints cumulatively. For example, if an area is part of a Very High Fire Hazard Severity Zone (Class I) and a Significant Ecological Area (Class II), it is mapped as Class II.

Figure C.1: Hazard, Environmental and Resource Constraints Model

Table C.1 outlines the constraints incorporated into the model by class, and the source of the data.

Table C.1: Constraints, by Class, and Data Sources

Hazards, Environmental and Resources	Class I	Class II	Class III	Data Source
FEMA Q3 Flood Zone 100 year		X		Federal Emergency Management Agency
FEMA Q3 Flood Zone 500 year	X			Federal Emergency Management Agency
National Forest		X		United States Forest Service
Open Space			X	Los Angeles County Department of Regional Planning Los Angeles County Assessor's Office GreenInfo Network – California's Protected Areas Database
Significant Ecological Areas (SEAs)		X		Los Angeles County Department of Regional Planning
Environmentally Sensitive Habitat Areas (ESHA)			X	Los Angeles County Department of Regional Planning
Oak Woodlands and Savannahs			X	Los Angeles County Department of Regional Planning
Cold Creek / Dark Canyon Resource			X	Los Angeles County Department of Regional Planning

Management Area				
Significant Watersheds			X	Los Angeles County Department of Regional Planning
Wildlife Migration Corridor / Habitat Linkages			X	Los Angeles County Department of Regional Planning
Coastal Zone	X			California Coastal Commission
Scenic Highways		X		California Department of Transportation
Significant Ridgelines	X			Los Angeles County Department of Regional Planning
Mineral Resource Zones	X			California Department of Conservation, Division of Mines and Geology
Oil and Gas Resources	X			California Department of Conservation, Division of Oil, Gas and Geothermal
Military Installations and Operation Areas	X			Military Operation Areas: Combination of Defense Installation Spatial Data Infrastructure (DISDI) dataset and information derived from the Flight Information Publications (FLIP), FAA Instrument Flight Rules (IFR), and Visual Flight Rules (VFR) data sources. Special Use Areas: Combination of DISDI dataset and information derived from FAA IFR and VFR data sources. Data verified by Regional Airspace Coordinators (RACs). Military Installations: DISDI dataset.
Dam and Reservoir Innundation Areas	X			California Emergency Management Agency
Tsunami Hazard Areas	X			California Emergency Management Agency University of Southern California California Geological Survey
Very High Fire Hazard Severity Zone	X			California Department of Forestry and Fire Protection, Fire and Resource Assessment Program
Airport Influence Areas	X			Los Angeles County Airport Land Use Commission
Active Fault Trace			X	Los Angeles County General Plan, Fault Rupture Hazards and Historic Seismicity Map
Seismically Induced Landslide Zone		X		California Geological Survey, Seismic Hazard Zone Maps
Seismically Induced Liquefaction Zone	X			California Geological Survey, A-P Maps

Alquist-Priolo Earthquake Fault Zone			X	California Geological Survey, Seismic Hazard Zone Maps
Hillside Management Areas: 25% - 49.9%	X			Los Angeles County Department of Regional Planning
Hillside Management Areas: 50% or greater slope		X		Los Angeles County Department of Regional Planning
Agricultural Resource Areas (ARAs)		X		Los Angeles County Department of Regional Planning
Prime Farmland		X		California Department of Conservation, Department of Land Resource Protection
Farmland of Statewide Importance		X		California Department of Conservation, Department of Land Resource Protection
Unique Farmland		X		California Department of Conservation, Department of Land Resource Protection
Farmland of Local Importance		X		California Department of Conservation, Department of Land Resource Protection

II. Land Use Legend

Population Density Standards

California Government Code Section 65302(a) requires general plan land use elements to contain population density standards for land use categories. This section summarizes the expected persons or employees per land use category upon General Plan buildout.

Residential Population Density

Table C.3: Residential Population Density, by Land Use Designation

General Plan Land Use	Acres	Population Density (Persons/Acre)	Population Estimate
General Plan Land Use Legend (not in a community plan)			
General Plan	**70,005**	**9.52**	**666,588**
CG - General Commercial	961	-	-
CM - Major Commercial	0.64	-	-
CR - Rural Commercial	0.62	-	-
H2 - Residential 2	1,462	6	9,007

H5 - Residential 5	1,768	15	27,229
H9 - Residential 9	14,394	26	373,103
H18 - Residential 18	2,469	52	128,011
H30 - Residential 30	808	67	53,951
H50 - Residential 50	118	112	13,157
H100 - Residential 100	5	223	1,101
H150 – Residential 150	0	0	0
IH - Heavy Industrial	1,707	-	-
IL - Light Industrial	1,853	-	-
IO - Industrial Office	0	-	-
MU - Mixed Use	158	335	53,019
OS-BLM - Bureau of Land Management	76	-	-
OS-C - Conservation	7,648	-	-
MR - Mineral Resources	1,088	-	-
ML - Military Land	36,615	-	-
OS-NF - National Forest	2,777	-	-
OS-PR - Parks and Recreation	7,105	-	-
OS-W - Water	2,065	-	-
P - Public and Semi-Public	6,917	-	-
RL1 - Rural Land 1	1,153	4	4,440
RL2 - Rural Land 2	126	2	243
RL10 - Rural Land 10	2,247	0.4	865
RL20 - Rural Land 20	12,759	0.2	2,456
RL40 - Rural Land 40	38	0.1	4

SP – Specific Plan	301	-	-
Community-Based Plans			
Altadena Community Plan	**5,604**	**11**	**61,359**
BP - Business Park	38	-	-
E - Estate/Equestrian	93	2	144
GC - General Commercial	64	-	-
I - Institutions	183	-	-
LD - Low Density Residential	3,068	18	56,694
LMD - Low/Medium Density Residential	1	37	46
MD - Medium Density Residential	26	49	1,271
MOS - Miscellaneous Open Space	68	-	-
MU - Mixed Use "Center"	37	49	1,792
N - Non-Urban	327	1	403
NF - National Forest and National Forest Managed Lands	416	-	-
PR - Public and Private Recreation	103	-	-
Public Streets	815	-	-
SP - La Vina Specific Plan	219	5	1,008
U - Utilities	145	-	-
Antelope Valley Area Plan	**1,132,744**	**0.95**	**1,070,571**
Airport	16,358	-	-
O-BLM - Open Space, Bureau of Land Management	2,436	-	-
C - Commercial	902	-	-
M - Industry	579	-	-
N1 - Non-Urban	502,174	1.86	934,440

N2 - Non-Urban	19,903	3.69	73,385
O - Open Space	70,471	-	-
O-NF - National Forest	510,413	-	-
O-W - Water Body	648	-	-
P - Public Service Facilities	671	-	-
TC - Transportation Corridor	2,649	-	-
U1 - Urban 1	4,450	9.87	43,931
U1.5 - Urban 1.5	140	6.15	862
U2 - Urban 2	738	16.95	12,505
U2D - Urban 2	50	12.31	614
U3 - Urban 3	9	43.20	377
U3D - Urban 3	155	28.80	4,457
East Los Angeles Community Plan	**3,381**	**38**	**128,487**
CC - Community Commercial	150	-	-
CM - Commercial Manufacturing	93	-	-
CR - Commercial Residential	65	67	4,361
I - Industrial	158	-	-
LD - Low Density Residential	132	25	3,246
LMD - Low/Medium Density Residential	1,045	49	51,146
MC - Major Commercial	95	-	-
MD - Medium Density Residential	1,041	67	69,735
P - Public Use	582	-	-
RP - Residential Parking	21	-	-
Hacienda Heights Community Plan	**6,360**	**10**	**65,833**

CG - General Commercial	131	-	-
H18 - Residential 18	201	52	10,402
H2 - Residential 2	719	6	4,429
H30 - Residential 30	10	67	693
H5 - Residential 5	2,110	15	32,499
H50 - Residential 50	7	112	785
H9 - Residential 9	594	28	16,466
IL - Light Industrial	28	-	-
OS-C - Open Space Conservation	403	-	-
OS-PR - Open Space Parks and Recreation	1,131	-	-
P-CS - Public and Semi-Public Community Serving	30	-	-
P-TF - Public and Semi-Public - Transportation Facilities	0	-	-
P-UF - Public and Semi-Public Utilities and Facilities	133	-	-
RL10 - Rural Lands 10	714	0.4	275
RL2 - Rural Lands 2	148	2	284
Malibu Coastal Land Use Plan	**51,141**	**0.3**	**16,729**
3 - Rural Land I	3,905	0.3	1,336
4 - Rural Land II	3,375	1	2,320
5 - Rural Land III	2,615	2	4,604
6 - Residential I	903	3	2,595
11 - Institution and Public Facilities	982	-	-
12 - Rural Business	18	-	-
13 - General Commercial	0	-	-
14 - Office/Commercial Services	0	-	-

16 - Low-Intensity Visitor-Serving Commercial Recreation	710	-	-
17 - Recreation-Serving Commercial	0	-	-
18 - Parks	15,441	-	-
8A - Residential III(A)	21	6	121
8B - Residential III(B)	75	17	1,273
9B - Residential IV(B)	5	5	29
9C - Residential IV(C)	0	31	15
M2 - Mountain Land	23,051	0.2	4,437
MU - Mixed Use - Specific Plan Required	39	-	-
Marina Del Rey Coastal Land Use Plan	**694**	**31**	**21,439**
B - Boat Storage	19	-	-
H - Hotel	26	-	-
MC - Marine Commercial	24	-	-
O - Office	5	-	-
OS - Open Space	42	-	-
P - Parking	17	-	-
PF - Public Facilities	5	-	-
R III - Residential III	38	78	2,970
R IV - Residential IV	22	100	2,270
R V - Residential V	96	167	16,202
SA – Senior Accommodations	2	-	-
VS/CC - Visitor-Serving / Convenience Commercial	32	-	-
W - Water	365	-	-
Rowland Heights Community Plan	**7,422**	**7**	**50,900**

C - Commercial	192	-	-
I - Industrial	144	-	-
N1 - Non-Urban 1	1,459	1	1,124
N2 - Non-Urban 2	510	3	1,730
O - Open Space	1,566	-	-
TOS - Transitional Open Space (N1)	272	1	210
TOS - Transitional Open Space (N2)	268	3	695
TOS - Transitional Open Space (U1)	252	7	1,878
U1 - Urban 1	1,276	9	10,998
U2 - Urban 2	1,278	18	22,728
U3 - Urban 3	68	36	2,477
U4 - Urban 4	51	49	2,517
U5 - Urban 5	84	78	6,543
Santa Catalina Island Coastal Land Use Plan	**46,137**	**0**	**0**
Commercial - Two Harbors	3	-	-
Conservation/Primitive Recreation - Catalina	20,212	-	-
Conservation/Recreation - Two Harbors	820	-	-
Extractive Use - Catalina	514	-	-
Industrial/Transportation - Two Harbors	5	-	-
Industrial/Transportation/Utilities - Catalina	172	-	-
Lodges/Inns - Two Harbors	14	-	-
Marine Commercial - Two Harbors	3	-	-
Open Space/Recreation - Two Harbors	108	-	-
Open Space/Structured Recreation - Catalina	24,057	-	-

Residential Land Uses - Two Harbors	136	-	-
undefined - Two Harbors	3	-	-
Utilites/Services - Two Harbors	7	-	-
View Corridor - Two Harbors	84	-	-
Santa Clarita Valley Area Plan	**270,887**	**1**	**237,638**
Residential	270,887	1	237,638
Santa Monica Mountains North Area Plan	**20,162**	**0.5**	**9,399**
C - Commercial	120	-	-
CR - Commercial Recreation - Limited Intensity	47	-	-
N1 - Rural Residential 1	454	3	1,173
N10 - Mountain Lands 10	4,265	0.3	1,419
N2 - Rural Residential 2	668	2	1,124
N20 - Mountain Lands 20	5,505	0.2	1,060
N5 - Mountain Lands 5	2,028	1	1,388
OS - Open Space	775	-	-
OS-DR - Open Space Deed Restricted	591	-	-
OS-P - Open Space Parks	4,731	-	-
OS-W - Open Space Water	39	-	-
P - Public and Semi-Public Facilities	515	-	-
TC - Transportation Corridor	0	-	-
U2 - Residential 2	252	6	1,386
U4 - Residential 4	148	9	1,323
U8 - Residential 8	26	21	526
Twin Lakes Community Plan	**45**	**4**	**174**

RC - Rural Communities	45	4	174
Walnut Park Neighborhood Plan	**369**	**37**	**13,717**
GC - General Commercial	35	-	-
MC - Mixed Commercial	11	-	-
NP I - Neighborhood Preservation I	167	28	4,619
NP II - Neighborhood Preservation II	21	55	1,146
NR - Neighborhood Revitalization	117	67	7,852
OC - Office Commercial	7	-	-
PU/I - Public Use / Institutional	8	-	-
R/P - Residential / Parking	4	28	100
West Athens-Westmont Neighborhood Plan	**1,489**	**27**	**40,539**
C.1 - Regional Commercial	45	-	-
C.2 - Community Commercial	81	-	-
C.3 - Neighborhood Commercial	2	-	-
C.4 - Commercial Manufacturing	15	-	-
CR - Commercial Recreation	13	-	-
OS.1 - Recreation / Open Space	122	-	-
PL.1 - Public/Quasi-Public Use	157	-	-
RD 2.3 - Single Family Residence	485	25	11,945
RD 3.1 - Two Family Residence	549	49	26,868
RD 3.2 - Medium Density Bonus	19	67	1,292
SCD - Senior Citizen Density Bonus	4	112	434
Grand Total	**1,616,440**	**N/A**	**2,383,373**

Note*:* The buildout for residential development on County land outside of community plan areas is based on 80 percent of the maximum residential density, with an exception for densities of no more than one unit per acre, which may buildout at the maximum.

The County includes a number of existing community plan areas. Assumptions for density and floor area ratios were developed in response to development standards in each community plan. Population projections were established by applying County-determined person per household assumptions for single family and multifamily housing types.

Source: Los Angeles County Department of Regional Planning, GIS Section.

Employment Population Density

Table C.4: Employment Population Density, by Land Use Designation

General Plan Land Use	Acres	Employee Density (Employees/Acre)	Employee Estimate
Proposed General Plan (not in a community plan)			
General Plan	**70,005.33**	**2.52**	**176,161**
CG - General Commercial	961	44	41,842
CM - Major Commercial	0.64	27	17
CR - Rural Commercial	0.62	21	13
H2 - Residential 2	1,462	0.07	100
H5 - Residential 5	1,768	0.06	100
H9 - Residential 9	14,394	0.2	3,086
H18 - Residential 18	2,469	0.29	711
H30 - Residential 30	808	0.53	427
H50 - Residential 50	118	2	250
H100 - Residential 100	5	-	-
H150 – Residential 150	0	-	-
IH - Heavy Industrial	1,706	17	28,458
IL - Light Industrial	1,853	17	30,907
IO - Industrial Office	0	-	-
MU - Mixed Use	158	128	20,249

OS-BLM - Bureau of Land Management	76	-	-
OS-C - Conservation	7,648	-	-
MR - Mineral Resources	1,088	-	0.46
ML- Military Land	36,615	-	-
OS-NF - National Forest	2,777	-	-
OS-PR - Parks and Recreation	7,105	0.23	1,625
OS-W - Water	2,065	0.15	307
P - Public and Semi-Public	6,917	4.23	29,267
RL1 - Rural Land 1	1,153	0.09	101
RL2 - Rural Land 2	126	-	-
RL10 - Rural Land 10	2,247	-	-
RL20 - Rural Land 20	12,759	-	-
RL40 - Rural Land 40	38	-	-
SP – Specific Plan	300.51	62.23	18,700
Community Plans			
Altadena Community Plan	**5,604**	**3**	**18,463**
BP - Business Park	38	80	3,075
E - Estate/Equestrian	93	0.1	5
GC - General Commercial	64	147	9,376
I - Institutions	183	4	803
LD - Low Density Residential	3,068	0.1	377
LMD - Low/Medium Density Residential	1	-	-
MD - Medium Density Residential	26	0.2	4
MOS - Miscellaneous Open Space	68	1	100

MU - Mixed Use "Center"	37	121	4,411
N - Non-Urban	327	-	-
NF - National Forest and National Forest Managed Lands	416	-	-
PR - Public and Private Recreation	103	2	164
Public Streets	815	-	-
SP - La Vina Specific Plan	219	1	150
U - Utilities	145	-	-
Antelope Valley Area Plan	**1,132,744**	**.05**	**51,219**
Airport	16,358	0.003	50
O-BLM - Open Space, Bureau of Land Management	2,436	-	-
C - Commercial	903	42.48	38,329
M - Industry	579	16.68	9,652
N1 - Non-Urban	502,174	0.002	926
N2 - Non-Urban	19,903	0.02	435
O - Open Space	70,471	0.005	324
O-NF - National Forest	510,413	0.0004	200
O-W - Water Body	648	-	-
P - Public Service Facilities	671	1.07	717
TC - Transportation Corridor	2,649	0.04	100
U1 - Urban 1	4,450	0.08	335
U1.5 - Urban 1.5	140	-	-
U2 - Urban 2	738	0.20	150
U2D - Urban 2	50	-	-
U3 - Urban 3	9	-	-

U3D - Urban 3	155	-	-
East Los Angeles Community Plan	**3,381**	**13**	**42,459**
CC - Community Commercial	150	129	19,239
CM - Commercial Manufacturing	93	46	4,289
CR - Commercial Residential	65	105	6,848
I - Industrial	158	33	5,234
LD - Low Density Residential	132	-	-
LMD - Low/Medium Density Residential	1,045	1	565
MC - Major Commercial	95	28	2,627
MD - Medium Density Residential	1,041	1	904
P - Public Use	582	5	2,753
RP - Residential Parking	21	-	-
Hacienda Heights Community Plan	**6,360**	**2**	**13,310**
CG - General Commercial	131	85	11,194
H18 - Residential 18	201	0.07	15
H2 - Residential 2	719	0.14	100
H30 - Residential 30	10	-	-
H5 - Residential 5	2,110	0.5	1,000
H50 - Residential 50	7	-	-
H9 - Residential 9	594	0.34	200
IL - Light Industrial	28	17	466
OS-C - Open Space Conservation	403	-	-
OS-PR - Open Space Parks and Recreation	1,131	0.2	200
P-CS - Public and Semi-Public Community Serving	30	3	100

P-TF - Public and Semi-Public - Transportation Facilities	0	-	-
P-UF - Public and Semi-Public Utilities and Facilities	133	-	-
RL10 - Rural Lands 10	714	-	-
RL2 - Rural Lands 2	148	0.2	35
Malibu Coastal Land Use Plan	**51,141**	**0.4**	**22,138**
3 - Rural Land I	3,905	0.01	23
4 - Rural Land II	3,375	0.004	15
5 - Rural Land III	2,615	0.05	120
6 - Residential I	903	-	-
11 - Institution and Public Facilities	982	8	7,600
12 - Rural Business	18	17	309
13 - General Commercial	0	17	8
14 - Office/Commercial Services	0	29	5
16 - Low-Intensity Visitor-Serving Commercial Recreation	710	16	11,603
17 - Recreation-Serving Commercial	0	17	3
18 - Parks	15,441	0.01	175
8A - Residential III(A)	21	-	-
8B - Residential III(B)	75	-	-
9B - Residential IV(B)	5	-	-
9C - Residential IV(C)	0	-	-
M2 - Mountain Land	23,051	0.07	1,603
MU - Mixed Use - Specific Plan Required	39	17	672
Marina Del Rey Coastal Land Use Plan	**694**	**6**	**4,493**
B - Boat Storage	19	4	82

H - Hotel	26	39	1,027
MC - Marine Commercial	24	43	1,020
O - Office	5	144	780
OS - Open Space	42	0.4	13
P - Parking	17	0.3	5
PF - Public Facilities	5	49	250
R III - Residential III	38	-	-
R IV - Residential IV	23	-	-
R V - Residential V	97	-	-
SA – Senior Accommodations	2	24	50
VS/CC - Visitor-Serving / Convenience Commercial	30	43	1,284
W - Water	366	-	-
Rowland Heights Community Plan	**7,422**	**3**	**20,661**
C - Commercial	192	82	15,764
I - Industrial	144	21	3,027
N1 - Non-Urban 1	1,459	-	-
N2 - Non-Urban 2	510	0.4	200
O - Open Space	1,566	0.1	194
TOS - Transitional Open Space (N1)	272	-	-
TOS - Transitional Open Space (N2)	268	-	-
TOS - Transitional Open Space (U1)	252	-	-
U1 - Urban 1	1,276	0.3	401
U2 - Urban 2	1,278	1	1,075
U3 - Urban 3	68	-	-

U4 - Urban 4	51	-	-
U5 - Urban 5	84	-	-
Santa Catalina Island Coastal Land Use Plan	**46,137**	**0.0**	**570**
Commercial - Two Harbors	3	3	7
Conservation/Primitive Recreation - Catalina	20,212	0.002	32
Conservation/Recreation - Two Harbors	820	0.02	17
Extractive Use - Catalina	514	-	-
Industrial/Transportation - Two Harbors	5	-	-
Industrial/Transportation/Utilities - Catalina	172	0.03	6
Lodges/Inns - Two Harbors	14	-	-
Marine Commercial - Two Harbors	3	-	-
Open Space/Recreation - Two Harbors	108	0.02	2
Open Space/Structured Recreation - Catalina	24,057	0.02	505
Residential Land Uses - Two Harbors	136	-	-
undefined - Two Harbors	3	-	-
Utilites/Services - Two Harbors	7	-	-
View Corridor - Two Harbors	84	-	-
Santa Clarita Valley Area Plan	**270,887**	**0.4**	**105,881**
Non-Residential	270,887	0.39	105,881
Santa Monica Mountains North Area Plan	**20,162**	**0.3**	**6,569**
C - Commercial	120	40	4,764
CR - Commercial Recreation - Limited Intensity	47	26	1,195
N1 - Rural Residential 1	454	0.05	21
N10 - Mountain Lands 10	4,265	0.05	200

N2 - Rural Residential 2	668	0.1	100
N20 - Mountain Lands 20	5,505	0.003	16
N5 - Mountain Lands 5	2,028	0.1	200
OS - Open Space	775	-	-
OS-DR - Open Space Deed Restricted	591	-	-
OS-P - Open Space Parks	4,731	0.01	62
OS-W - Open Space Water	39	0.3	11
P - Public and Semi-Public Facilities	515	-	-
TC - Transportation Corridor	0	-	-
U2 - Residential 2	252	-	-
U4 - Residential 4	148	-	-
U8 - Residential 8	26	-	-
Twin Lakes Community Plan	**45**	**0**	**0**
RC - Rural Communities	45	0	0
Walnut Park Neighborhood Plan	**369**	**14**	**5,044**
GC - General Commercial	35	109	3,786
MC - Mixed Commercial	11	43	474
NP I - Neighborhood Preservation I	167	1	100
NP II - Neighborhood Preservation II	21	-	-
NR - Neighborhood Revitalization	117	-	-
OC - Office Commercial	7	87	572
PU/I - Public Use / Institutional	8	14	112
R/P - Residential / Parking	4	-	-
West Athens-Westmont Neighborhood Plan	**1,489**	**7**	**10,894**

C.1 - Regional Commercial	45	24	1,060
C.2 - Community Commercial	81	87	6,994
C.3 - Neighborhood Commercial	2	43	79
C.4 - Commercial Manufacturing	15	21	318
CR - Commercial Recreation	13	0.4	5
OS.1 - Recreation /Open Space	122	1	70
PL.1 - Public/Quasi-Public Use	157	11	1,743
RD 2.3 - Single Family Residence	485	1	325
RD 3.1 - Two Family Residence	549	0.4	200
RD 3.2 - Medium Density Bonus	19	5	100
SCD - Senior Citizen Density Bonus	4	-	-
Grand Total	**1,616,440**	**N/A**	**477,292**

Note: Wherever possible, employment assumptions were provided by the Natelson Company Employment Density Study. Employment estimates for public uses, such as Public Facilities, Public/Quasi-Public, and Institutions, were determined individually to reflect existing uses.

Source: Los Angeles County Department of Regional Planning, GIS Section.

III. Land Use Policy Map

Map Conversion Methodology

Conversion to Digitized and Parcel-Based Land Use Policy Map

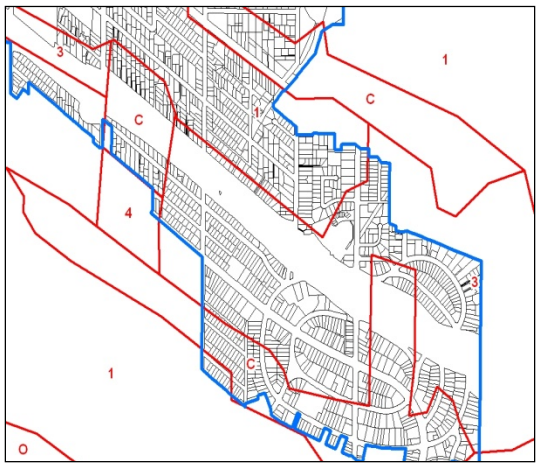
The 1980 General Plan Land Use Policy Map generalizes land use designations, and functions as a framework for the development of more detailed area and community plans. In developing parcel-based maps for this General Plan, it was necessary to examine every community at a parcel level to determine the appropriateness of the General Plan land use designations.

The conversion to parcel-based land use maps began in 1997, with the creation of base maps for all of the unincorporated areas of Los Angeles County, using the parcel patterns from zoning maps as a guide to make the line work more accurate. In 2004 and 2005, the General Plan and GIS sections reviewed the digitized, parcel-based maps and fixed discrepancies. In addition, the staff edited the maps to reflect adopted project-specific amendments to the maps.

Figure C.2 is a snapshot of an unincorporated community from the 1980 General Plan Land Use Policy Map. Figure C.3 is a digitized version of the same snapshot overlaid on a parcel-based map.

Figure C.2: 1980 General Plan Land Use Policy Map Snapshot

Figure C.3: GIS Digitized Version of the 1980 General Plan Land Use Policy Map



Figures C.4 and C.5 provide a final illustration of the land use map conversion process. Figure C.4 is a snapshot of the adopted 1980 General Plan Land Use Policy Map. Figure C.5 represents the fully converted, GIS-driven and parcel-based land use map.

Figure C.4: 1980 General Plan Land Use Map

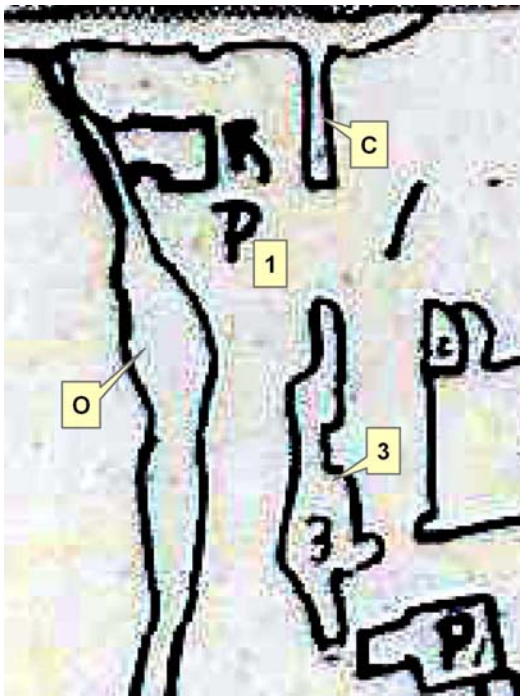
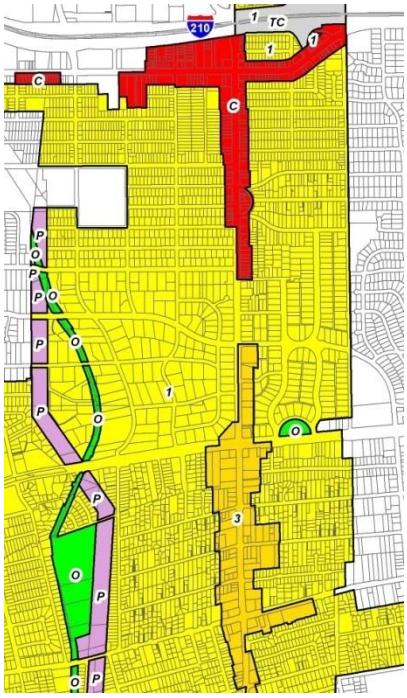


Figure C.5: Current Department Land Use Map



Additional Refinements

In 2010, the staff further refined the converted General Plan Land Use Policy Map using the approach outlined in the 1980 General Plan to determine land uses for areas not covered by an area or community plan.

Objectives

- Reduce inconsistencies between zoning and land use designations;
- Eliminate and discourage spot zoning;
- Reduce conflicts between adjacent uses;
- Reflect existing land use trends and/or envision future trends; and
- Eliminate unnecessary split-zoning/land use designations.

Factors considered

- Parcelized 1980 General Plan Land Use Policy Map (GIS-NET) and proposed land use designation of the subject property;
- Existing zoning of the subject property;
- Existing uses and densities (if residential) on subject property;
- Year built/established;
- Surrounding land use designation and zoning;
- Surrounding existing uses and densities (if residential);
- Plan amendments and/or zone changes;
- Recent approvals/projects under construction on the subject property; and
- City spheres of influence.

Policy-Driven Land Use Policy Map Changes

Transit Oriented Districts (TODs)

The TOD boundaries are delineated on the Land Use Policy Map as half-mile radii from stations along Metro rail and bus rapid transit lines that are within, or adjacent to, unincorporated areas. The General Plan establishes 11 TODs, as discussed in the Land Use Element.

Where not covered by an existing community-based plan, and where appropriate, the staff designated the commercial corridors within the TODs to Mixed Use MU, which allows multifamily, commercial and mixed uses at residential densities ranging from 0-150 du/ac and commercial uses at a maximum of FAR 3.0.

Industrial Area Preservation and Conflicts

The staff made land use changes based on the industrial land analysis (see Appendix J). In some instances, the recommended Employment Protection Districts differ from the boundaries identified on the Land Use Policy Maps. The recommended boundaries were refined as part of the land use mapping process, and therefore, may not be identical in every case. In addition, in some instances, instead of identifying an area as an Industrial Flex District, as recommended by the industrial lands study, the area was re-designated on the Land Use Policy Map to commercial to reflect the existing land uses. In other instances, the area was designated industrial and identified as an Industrial Flex District on the Opportunity Areas maps.

The staff also studied areas that are appropriate for heavy industrial uses, based on existing uses, zoning and additional research. The staff designated most of the areas zoned for heavy industrial asHeavy Industrial (IH), as well as sites with major industrial uses with noxious impacts, such as oil refineries.

Hillside Management Areas and Other Hazard, Environmental and Resource Constraints

Using the Hazard, Environmental and Resource Constraints Model, and existing and surrounding uses, the staff made land use changes to a limited number of hillsides and other areas with environmental constraints.

Appendix D: Mobility Element Resources

I. County Transit Services

Table D.1: Fixed Route Shuttle Services, Average Monthly Boardings, July 2011-June 2012

Fixed Route Shuttle Services	Average Monthly Boardings
Acton Agua Dulce Shuttle	210
Athens Shuttle	5,572
Avocado Heigths/Bassett/West Valinda Shuttle	5,645
Baldwin Hills Parklands Shuttle	No data*
Children's Court Shuttle	5,374
DASH Boyle Heigths/ East LA Shuttle**	41,378
East Valinda Shuttle	11,681
El Sol Shuttle (East LA)	114,348
Florence-Firestone/Walnut Park Shuttle	16,092
Lennox Shuttle	5,620
Los Nietos Shuttle	880
King Medical Center Shuttle	6,158
Sunshine Shuttle (South Whittier)	17,684
Willowbrook Route A Shuttle	1,786
Willowbrook Route B Shuttle	5,972

Source: Los Angeles County Department of Public Works, Fiscal Year 2012.

*Service implemented in January 2013. Ridership data is not available.

**Service operated by the City of Los Angeles.

Table D.2: Paratransit Services, Average Monthly Boardings, July 2011-June 2012

Paratransit Services	Average Monthly Boardings
Agoura Hills	223
Alondra Park/Del Aire/El Camino Village	36
Azusa	364
Cityride	114
East Los Angeles	2,049
East San Gabriel	874
La Cresenta	398
Ladera	22
Lennox	488
Mid San Gabriel	816
Palos Verdes Pennisula	35
Rancho Dominguez	542
Willowbrook	843
Whittier, et al	3,207

Source: Los Angeles County Department of Public Works, Fiscal Year 2012.

II. Bicycle Collision Data

Table D.3: Bicycle Collisions in Unincorporated Los Angeles County, 2004-2009

Year	Crashes	Killed
2004	272	5
2005	245	2
2006	209	6
2007	220	5
2008	220	5
2009	203	2
Total	**1,369**	**25**

Source: California Highway Patrol Statewide Integrated Traffic Records System (SWITRS), 2010.

III. Mode of Transportation

Table D.4: Means of Transportation to Work for Workers 16 Years and Older, 2010

Means of Transportation	Unincorporated Areas	Los Angeles County
Drove Alone	74.14%	72.13%
Carpooled	12.53%	11.32%
Used Public Transportation	5.52%	7.09%
Walked	1.76%	2.86%
Bike, Motorcycle, Taxi, Other Means	1.86%	2.05%
Worked at Home	4.20%	4.56%

Source: 2006-2010 American Community Survey, 5-Year Estimates, SF B08101.

Appendix E: Conservation and Natural Resources Element Resources

I. Open Space and Natural Areas in Los Angeles County

Los Angeles County offers a wide variety of open space and natural areas. The following open space and natural areas are managed by the County or are located primarily within the unincorporated areas:

Angeles National Forest

The Angeles National Forest was established by Executive Order in 1892 and is managed by the U.S. Forest Service. The Forest covers over 650,000 acres. The Angeles National Forest manages the watersheds within its boundaries to provide water to Southern California and to protect surrounding communities from catastrophic floods. The land within the Angeles National Forest is diverse in appearance and terrain, and provides many opportunities for recreational and scenic enjoyment. Much of the Angeles National Forest is covered with dense chaparral, pine and fir covered slopes as elevations in the Angeles National Forest range from 1,200 to 10,064 feet.

Deane Dana Friendship Park

Deane Dana Friendship Park, which is a 123-acre park located on the Palos Verdes Peninsula, affords dramatic panoramic views of Santa Catalina Island, Los Angeles and Long Beach harbors, the City of Los Angeles to the north, and the San Gabriel and San Bernardino mountain ranges. There are hiking trails throughout the park.

Devil's Punchbowl Natural Area

Devil's Punchbowl is a 1,310-acre natural area that consists of rugged wilderness rock formations along the San Andreas Fault on the northern slope of the San Gabriel Mountains. The terrain climbs from 4,200 feet to 6,500 feet in elevation, with natural plant and animal communities ranging from desert scrub to pine forests. A seasonal stream runs through the natural area.

Eaton Canyon Natural Area

Situated at the base of Mt. Wilson, this 190-acre natural area contains several plant and native habitat communities. Eaton Creek flows through the Canyon during all but the summer months. The 7,600 square foot nature center contains displays of local flora and fauna, ecosystem concepts and live animals. The natural area offers five miles of nature trails and an equestrian trail, and serves as a trailhead to the Mt. Wilson Toll Road and Henninger Flats.

High Desert Wildlife and Wild Flower Sanctuaries

The County currently operates eight wildlife sanctuaries and one wildflower sanctuary in the high desert of Antelope Valley. Ranging from 2,500 to over 3,600 feet in elevation and encompassing more than 2,000 acres, the sanctuaries offer opportunities for spring wildflower viewing, bird watching, hiking and horseback riding. Wildlife seen on the preserves vary from horned lizards, chuckwallas and rattlesnakes, to prairie falcons and golden eagles. Insect life is most abundant during the warmer months, and in spring, the Joshua tree and other large shrubs provide nesting

sites for a variety of songbirds. Other protected animals are the kit fox, desert tortoise and Mojave ground squirrel.

Kenneth Hahn State Recreation Area

The 300-acre Kenneth Hahn State Recreation Area, managed by the County, includes large areas of native coastal sage scrub habitat, lawns and landscaped areas, picnic sites, tot lots, a fishing lake, a lotus pond, a community center, and five miles of trails. One of the most actively used features is the park's more than seven miles of footpaths and trails.

Michael D. Antonovich Open Space Preserve

The Michael D. Antonovich Open Space Preserve offers 500 acres of dedicated open space in the Santa Susana Mountains and is managed by the Mountains Recreation and Conservation Authority (MRCA). Located on the northern border of Los Angeles, this open space preserve contains a diversity of flora and fauna, from big cone Douglas fir, California walnut and oak trees to black bears, deer and mountain lions. The Preserve also provides important habitat connections through its numerous wilderness trails in the Rim of the Valley corridor of the Santa Clarita Woodlands Park.

Placerita Canyon Natural Area

This 350-acre natural area is located in an east-west running canyon featuring oak groves, chaparral-covered slopes and a sycamore-lined stream. Placerita Canyon is home to the Oak of the Golden Dream, where gold was "first" discovered in California in 1842, and Walker's Cabin, which is a relic of early frontier living. Placerita Canyon contains eight miles of hiking trails.

Santa Monica Mountains National Recreation Area

The 150,000-acre Santa Monica Mountains National Recreation Area is a part of the National Park System, which encompasses the mountain range from the Oxnard Plain in Ventura County, past Topanga State Park to Franklin Canyon and the Hollywood Bowl in Los Angeles. The Recreation Area preserves natural habitats, historical and cultural sites, offers recreational opportunities, and acts to improve the air quality for the Los Angeles Basin. Covered by chaparral, oak woodlands, and coastal sage scrub, it is home to many species listed as rare, threatened, or endangered.

Santa Catalina Island Regional Park

Santa Catalina Island Regional Park consists of 41,000 acres of natural open space, with miles of hiking trails, camp sites and a wildlife sanctuary. The Santa Catalina Island Interpretive Center is located within the park.

Schabarum Regional Park

The 640-acres Schabarum Regional Park is comprised of open space and natural areas, including picturesque canyons and rolling hills for hiking, biking and horseback riding. Over 90 percent of this park has been left in its natural state for the public to enjoy.

Vasquez Rocks Natural Area Park

This 945-acre natural area is a hiking, picnicking, and equestrian area. The park is located in the high desert near Agua Dulce Springs and features rock formations, Tatavian Indian sites, and a

seasonal stream. The principal plant communities are desert, chaparral, and riparian.

Whittier Narrows Natural Area

This natural area occupies approximately 300 acres in the southern portion of the Whittier Narrows Recreation Area. Bordering the San Gabriel River, the Natural Area is home to several habitats, with the dominant one being a riparian woodland. The southeastern portion of the site features four lakes that provide a winter sanctuary for migrating waterfowl and are opened by special permit for birding and photography. This area is near lakes and contains many plants and animals that are typically found within a wetland community.

II. Conservancies

The County works with various conservancies to maintain and protect open space land in Los Angeles County. Land conservancies are private, nonprofit organizations and public agencies that share a common goal: to conserve land for the benefit of people and nature. Land conservancies are generally started by community residents who wish to preserve a certain area or piece of open space land on a local or regional scale. Land conservancies have the flexibility to acquire, hold and manage land in the public interest, and also to preserve open space through voluntary conservation agreements with landowners, which permanently protect the land from development, while the title remains with the landowner. Most conservancies work in partnership with local governments and provide various levels of educational programs and land restoration and/or land enhancement projects.

The County works with a number of conservancies to preserve and protect the County's open spaces:

Antelope Valley Conservancy

The Antelope Valley Conservancy is a local land trust conservancy that obtains and stewards lands that are important to the community for quality of life, scenic beauty, and plant and animal habitat. AVC focuses on Joshua tree woodlands, the keystone species of the Mojave Desert, which supports a wide variety of native species. Most of the Conservancy's targeted preservation lands are in the County's designated Significant Ecological Areas. (http://www.avconservancy.org/)

Baldwin Hills Conservancy

The Baldwin Hills Conservancy (BHC) was created by the State in 2000. Specifically, BHC is responsible for: implementing the Baldwin Hills Park Master Plan; prioritizing and implementing acquisition of additional recreational and open space land for the expansion of Kenneth Hahn State Recreation Area; conducting planning activities for the area; and developing and coordinating a program of resource stewardship for optimum recreational and natural resource value based on the needs of the surrounding community. (http://www.bhc.ca.gov/)

California Coastal Conservancy

Established in 1976, the California Coastal Conservancy is a state agency that purchases, protects, restores, and enhances coastal resources, and provides access to the shore. The Conservancy works in partnership with local governments, other public agencies, nonprofit organizations, and private landowners. To date, the Conservancy has undertaken more than 1,800 projects along the

1,100 mile California coastline. (http://www.scc.ca.gov/)

Catalina Island Conservancy

In 1974, the Santa Catalina Island Company entered into a 50 year Open Space Easement agreement with the County, guaranteeing public recreational and educational use of 41,000 acres of Santa Catalina Island, consistent with good land conservation practices. The Santa Catalina Island Company subsequently deeded this land to the non-profit Catalina Island Conservancy (formed in 1972), along with an additional 1,135 acres. The Catalina Island Conservancy continues to manage 42,135 acres on Santa Catalina Island, providing the highest level of conservation protection to 88 percent of Santa Catalina Island. The Conservancy's mission is "to be a responsible steward of its lands through a balance of conservation, education and recreation." The conservation activities include wildlife management, a plant ecology program, invasive plant management, restoration of degraded areas and scientific research by many different researchers from throughout the country. Other activities include various educational camps for youth, several campgrounds and hiking and biking trails. (http://www.catalinaconservancy.org/)

Mountains Recreation and Conservation Authority

Established in 1985, the Mountains Recreation and Conservation Authority (MRCA) is a partnership between the Santa Monica Mountains Conservancy, the Conejo Recreation and Park District, and the Rancho Simi Recreation and Park District. The MRCA is dedicated to the preservation and management of open space and parkland, watershed lands, trails, and wildlife habitat. The MRCA manages almost 60,000 acres of public lands and parks, and provides comprehensive education and interpretation programs for the public. The MRCA works in cooperation with the SMMC and other local partners to acquire parkland, participate in vital planning processes, and complete major park improvement projects. The MRCA also provides natural resources and scientific expertise, critical regional planning services, park construction services, park operations, fire prevention, ranger services, and educational and leadership programs for youth. (http://www.mrca.ca.gov/)

Newhall Ranch High Country Recreation and Conservation Authority

The Newhall Ranch High Country Recreation and Conservation Authority is a joint powers authority formed by the SMMC, the County, and the City of Santa Clarita. Its purpose is the conservation and management of public open space lands set aside for habitat and recreation pursuant to the Los Angeles County Board of Supervisors approval of the Newhall Ranch project, the Westridge project, and any other such open space lands dedicated by Newhall Land Company or its successors. (http://smmc.ca.gov/NRHCRCA.asp)

Puente Hills Habitat Preservation Authority

The Puente Hills Habitat Preservation Authority (PHHPA) is a joint powers authority with a board of directors consisting of the City of Whittier, the County, Los Angeles County Sanitation Districts, and the Hacienda Heights Improvement Association. The PHHPA was created in 1994 as mitigation for the Puente Hills Landfill. To date, the PHHPA manages 3,860 acres of preserved public open space. The PHHPA's main focus is to acquire the remaining open space within its jurisdiction, with special consideration given to the Hacienda Heights area. (http://www.habitatauthority.org/)

San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy

The San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy (RMC) was created by the State in 1999. RMC is one of nine conservancies within the California Resources Agency. Its mission is to preserve open space and habitat in order to provide for low-impact recreation and educational uses, wildlife habitat restoration and protection, and watershed improvements. RMC's territory covers eastern portions of Los Angeles County and western Orange County, which is a vast and varied area that includes mountains, valleys, rivers, coastal plain, and coastline. (http://www.rmc.ca.gov/)

San Gabriel Mountains Regional Conservancy

The San Gabriel Mountains Regional Conservancy is devoted to watershed management and a great variety of other projects in the San Gabriel River watershed of the eastern portion of Los Angeles County. Included in the region are the San Gabriel Mountains, the San Gabriel River valley and related areas. (http://www.sgmrc.org/)

Santa Clarita Watershed Recreation and Conservation Authority

The Santa Clarita Watershed Recreation and Conservation Authority (SCWRCA) was established in 1993 by the City of Santa Clarita and the Santa Monica Mountains Conservancy in order to cooperatively plan for the preservation of open space, trails, parkland, and watershed protection in the Santa Clarita area and the upper Santa Clara River watershed. In 2002, the SCWRCA finalized the City's and Conservancy's long-standing efforts to acquire the 442-acre Whitney Canyon Ranch. (http://smmc.ca.gov/SCWRCA.asp)

Santa Monica Mountains Conservancy

The Santa Monica Mountains Conservancy (SMMC) was established by the State in 1980. Since that time, it has helped to preserve over 60,000 acres of parkland in both wilderness and urban settings, and has improved more than 114 public recreational facilities throughout Southern California. Through direct action, alliances, partnerships, and joint powers authorities, the SMMC's mission is to strategically buy back, preserve, protect, restore, and enhance treasured pieces of Southern California to form an interlinking system of urban, rural and river parks, open space, trails, and wildlife habitats that are easily accessible to the general public. (http://smmc.ca.gov/)

Watershed Conservation Authority

The Watershed Conservation Authority (WCA) was created in 2003 as a joint powers entity of the RMC and the Los Angeles County Flood Control District. The focus of the WCA is on projects that will provide open space, habitat restoration, and watershed improvement projects in the watersheds of both the San Gabriel River and the lower Los Angeles River. (http://watershedconservationauthority.org/)

Wildlife Corridor Conservation Authority

The Wildlife Corridor Conservation Authority (WCCA) was established to provide for the proper planning, conservation, environmental protection, and maintenance of lands within the Puente-Chino Hills corridor area. Its goal is to assure that sufficient continuity of habitat can be preserved to maintain a functioning wildlife corridor made up of about 40,000 acres of land located between the

Santa Ana Mountains and Whittier Hills. WCCA's governing board consists of representatives from the cities of Brea, Whittier, Diamond Bar, La Habra Heights, the Santa Monica Mountains Conservancy, California Department of Parks and Recreation, California Department of Fish and Game, the County, and two public members. (http://smmc.ca.gov/WCCA.html)

III. Regional Habitat Linkages

Habitat linkages are defined as area within the overall range of a species or suite of species that possess sufficient cover, food, forage, water and other essential elements to serve as a movement pathway, or between two or more larger areas of habitat. Depending on the species, linkages vary in size. For example, a belt of coastal sage scrub traversing a golf course, connecting sage scrub habitat areas on either side, providing a safe passage zone for smaller, slower-moving species (such as lizards and rodents) to maintain population connectivity between the two sides of the golf course is one form of habitat linkage.

Wildlife corridors, which are areas of open space of sufficient width to permit larger, mobile species (such as foxes, bobcats and coyote) to pass between larger areas of open space, or to disperse from one major open space region to another, are another type of habitat linkage. Such areas are generally several hundred feet wide, unobstructed, and usually possess cover, food and water. The upland margins of a creek channel, open ridgelines, open valleys or the bottoms of drainages often serve as major corridors locally, as do riparian alignments.

Biological resources are important in a regional context, serving to connect resources in adjacent local jurisdictions. Critical biological resources are maintained through habitat connectivity, which sustains population genetic diversity, and provides refuge for migrant species. Regional habitat linkages are identified in the Conservation and Natural Resources Element. The Antelope Valley, Puente Hills, San Andreas, Santa Clara River, Santa Felicia, Santa Monica Mountains, and Santa Susana Mountains and Simi Hills SEAs serve as important regional habitat linkages. More details about linkages between and within each of these SEAs are provided below:

Antelope Valley SEA

The SEA extends from the Angeles National Forest to the playa lakes within Edwards Air Force Base, encompassing the whole of the two largest drainages exiting the northern slope of the San Gabriel Mountains. Its geographical features serve as a major habitat linkage and movement corridor for all wildlife species within its vicinity. Ecologically generalist species (such as bobcat, coyote, mule deer, fox, raccoon, etc.) have the ability to move across such vast areas and through-changing habitat types. For such species, the SEA may serve as an important system for long-term inter-populational genetic exchange. For smaller or less-mobile species, or taxa, which are more narrowly restricted in their habitat needs, the SEA can serve as a broad linkage zone, in which individual movement can take place during seasonal or populational dispersal. This provides essential genetic exchange within and between metapopulations. The two drainages, combined with the upland terrestrial Desert-Montane transect portion of the SEA, ensure linkage values and direct movement zones for all of the wildlife species present within the County portion of the Antelope Valley.

Puente Hills SEA

Evidence of significant wildlife movement throughout the Puente Hills SEA has been documented in a two-year carnivore study commissioned by the Santa Monica Mountains Conservancy as part of a

multi-jurisdictional effort to establish a regionwide wildlife movement linkage. This SEA represents the County portion of a continuous series of natural open space within the Puente Hills and Chino Hills. Overall, this open space extends north and west from State Route-91 in Orange and Riverside counties to the Whittier Narrows reach of the San Gabriel River. The Puente and Chino Hills are a natural, physical link between the Santa Ana Mountains and the San Gabriel River. The San Gabriel River flows from and links to the San Gabriel Mountains. By virtue of these linkages and a complex of interconnected habitat units, the Puente and Chino Hills function as both an important wildlife linkage and resident habitat area for regional wildlife populations.

San Andreas SEA

The San Andreas SEA includes several important linkages for wildlife movement. The Fault Zone connects with the Santa Clara River drainage in the Lake Hughes area, linking with this large, free-flowing watershed that extends to the Pacific Ocean in Ventura County. The foothills and grassland in the westernmost tip of the SEA are part of an important linkage between the San Gabriel Mountains and the Tehachapi Mountains. This linkage to the Tehachapi Mountains is important because it connects the southernmost extent of the Sierra Nevada Mountains with the San Gabriel Mountains and with the Southern Coast Ranges. The Tehachapi Mountains are the only mountain linkage between the Transverse Ranges and the Southern Coast Ranges to the Sierra Nevada Range. This largely natural area may be an important topographic reference for migrating birds and bats, as well as functioning for essential high elevation foraging grounds along their migration route. The Tehachapi Mountains further provide a valuable link for gene flow between divergent populations of many species, including plants. The SEA includes several large drainages that extend from the San Gabriel Mountains to the western end of the Mojave Desert: the Antelope Valley floor and the Fairmont and Antelope buttes. These washes provide an important linkage for animals traveling between the mountains (all the ranges mentioned above) and the Mojave Desert. In addition, Amargosa Creek facilitates east-west wildlife movement through Liebre Mountain, Portal Ridge, and Ritter Ridge to Barrel Springs in the Antelope Valley near the City of Palmdale. The frequency of valuable riparian communities along this travel route located within an otherwise arid climate, further indicates the importance of this area, which is one of the busiest natural wildlife linkages in the region.

Santa Clara River SEA

Historically (and prehistorically) the riparian corridor along the Santa Clara River has served as the primary east-west linkage between the Pacific coastline, Coast Ranges, interior ranges, high desert and southern Sierra (via the Tehachapi Range). Animals moving through the Santa Clara River at one time had unobstructed passage along the river and within its tributaries. The present configuration of the tributary drainages has reduced connectivity from the Santa Clarita Valley to the north, but the Santa Clara River remains relatively intact and open. The SEA embraces the river corridor and the linkage zones that are considered essential to ensuring connectivity and resource values within the historic movement zones for all of the wildlife species present within the County portion of the Santa Clara River.

Santa Felicia SEA

Historically, riparian corridors have served as linkages between the Pacific coastline, Coast Ranges, interior ranges, the high desert and southern Sierras (via the Tehachapi Range). The Santa Felicia stream corridor likely serves the functions today. The elevation in this area is lower than that of the Los Padres National Forest, to the north, which facilitates animal movement within the riparian

systems between Piru Lake in Ventura County and the San Gabriel Mountain Range in the County. The tributary drainages for Santa Felicia Creek within this SEA remain intact and unobstructed.

Santa Monica Mountains SEA

Although wildlife movement is hampered by rural development in the SEA, animals are still able to move through the Santa Monica Mountains in many areas. Due to its large size and topographic complexity, many linkages are certain to occur within the SEA at various bottlenecks. These linkages allow movement between large open space areas within the SEA, as well as between areas outside the SEA, such as the Simi Hills and the western extent of the Santa Monica Mountains in Ventura County. The genetic flow through these areas is crucial in maintaining the diversity and viability of certain species within the Santa Monica Mountains. Open space linkages between Kanan Road and Calabasas Parkway along State Route-101, as indicated by the National Park Service, are of particular importance for continued wildlife movement due to the lack of alternative routes and encroachment of development. Although there are significantly large open spaces within the SEA, contiguous habitat linkages between them are critical in reducing bottlenecks and providing for long-term sustainability.

Santa Susana Mountains and Simi Hills SEA

The Santa Susana Mountains and Simi Hills SEA includes several important linkages for wildlife movement. The Santa Susana Mountains and Simi Hills provide a vast open space corridor to foster wildlife movement between the Santa Monica Mountains to the south, San Gabriel Mountains to the east, and the Los Padres National Forest to the north. Dense, natural habitat associated with the majority of the study area provides excellent opportunities for concealment and water sources, while the grasslands provide an abundance of prey.

IV. Significant Ecological Areas

History of the SEA Program

Los Angeles County's Significant Ecological Areas (SEAs) Program has schematic roots in an initial General Plan guiding document, the 1970 Environmental Development Guide, which was adopted as a preliminary General Plan for the County. The Open Space Concept Plan and 1990 Open Space Policy Map depict greenbelt areas and rural lands that reasonably correspond to the current SEA map.

The original Significant Ecological Area Report was prepared in 1972 by scientists from the University of California, Los Angeles, the Los Angeles County Museum of Natural History and other local academic institutions, at the request of the Los Angeles County Department of Regional Planning (DRP). The DRP asked the report authors to identify "significant ecological areas," which due to their high biological resource value, should receive special consideration during the formulation of the 1973 General Plan. In the final report, 81 such areas were mapped and brief descriptions of the value of each were given. The 81 areas were then included on the Vegetation and Wildlife Map in the Conservation Element of the 1973 General Plan.

In 1976, following the 1975 court decision requiring the preparation of a revised General Plan, the DRP and the Environmental Systems Research Institute commissioned the Los Angeles County Significant Ecological Area Study (1976 SEA Study), from the environmental consulting firm, England and Nelson. After excluding the Channel Islands and national forest lands from the study

area, the 1976 SEA Study reviewed the data and criteria used to establish the original significant ecological area list, analyzed new information, developed of a set of eight criteria to be used to select and prioritize significant ecological areas and concluded with individual maps and descriptions for each. From an initial list of 115 sites, 62 areas met the criteria and were recommended for adoption by the study. In 1980, 61 of these biologically significant areas were adopted as part of the Conservation and Open Space Element of the Los Angeles County General Plan on the Special Management Areas Policy Map and through individual descriptions of the SEAs in Technical Supplement E of the 1980 General Plan.

In 1991, supplemental studies further assessing the biological resources within seven SEAs were conducted. The Phase I Studies, conducted by Michael Brandman Associates, assessed the following SEA areas: Cold Creek Significant Ecological Area No.9, San Fransciquito Canyon Significant Ecological Area No.19, Dudleya Densiflora Population Significant Ecological Area No.45, Kentucky Springs Significant Ecological Area No.61, Las Virgenes Significant Ecological Area No.6, Tonner Canyon and Chino Hills SEA No. 15, and Tuna Canyon SEA No. 10. The studies looked at current ownership patterns, existing resources, development pressures and made recommendations into the future management of the SEAs. All of the Phase I studies found either that the SEA boundaries were adequate in size or recommended the expansion of the boundaries to better encompass and protect biotic resources.

In 2000, the DRP commissioned the Los Angeles County Significant Ecological Area Update Study (2000 Update Study) prepared by PCR Services Corporation, Frank Hovore & Associates and Forma Systems. The 2000 Update Study included an Executive Summary, Background Report and twelve biological resources assessments for the Proposed Antelope Valley SEA, Proposed Cruzan Mesa Vernal Pools SEA, Proposed East San Gabriel Valley SEA, Proposed Joshua Tree Woodlands SEA, Proposed Puente Hills SEA, Proposed San Andreas SEA, Proposed San Dimas Canyon and San Antonio Wash SEA, Proposed San Gabriel Canyon SEA, Proposed Santa Catalina Island SEA, Proposed Santa Clara River SEA, Proposed Santa Monica Mountains SEA, and the Proposed Santa Susana Mountains and Simi Hills SEA. These twelve biological resource assessment areas consolidated the 1980 unincorporated area SEAs into larger areas for study and proposed inclusion as SEAs.

The 2000 Update Study also examined the assumptions of the original eight SEA designation criteria from the 1976 SEA Study, modifying one criterion and deleting two. The modification of Class 1 changed the language from “the habitat of rare, endangered, and threatened plant and animal species,” to specify “the habitat of *core populations* of rare, endangered and threatened plant and animal species.” Class 6: “areas important as game species habitat or as fisheries” was removed due to the questionable contribution of these areas towards maintaining biotic diversity. Class 8: “special areas” was deleted due to the vague nature of that designation. The six SEA criteria are contained within this Appendix E, and each SEA description lists which criteria it meets.

From 2001 to 2011, the DRP conducted public outreach, solicited additional recommendations on the SEA boundaries and checked the SEA boundaries with an expert panel of biologists convened in 2010.

SEA Designation Principles

Previously, areas were assigned SEA designations in an attempt to slow or modify the type of development within their boundaries. However, as the County underwent a period of unanticipated growth, many of the SEAs experienced a reduction and/or degradation of their biotic diversity.

Appendix E uses the definition of biotic or biological diversity provided by the 1990 U.S. Congressional Biodiversity Act, HR1268, which is defined as a full range of variety and variability within and among living organisms and the ecological complexes in which they occur.

Currently, the design of the SEAs is based on scientifically-grounded concepts regarding size and connectivity. Where feasible, SEAs form linkages between core habitats, which are large blocks of habitat generally conforming to a significant topographical feature, such as a watershed, major river, butte, etc., in order to ensure regional species movement.

Most SEA designations do not focus on a single resource or habitat type and, over time, conservation plans have come to employ a fluid approach to conserving an ever increasing list of sensitive resources (e.g., endangered species, habitats of limited distribution, and "patchy" habitats such as coastal sage scrub). The SEA designations rely on two primary conservation principles: namely that species extinction rates are lower on larger “islands,” or blocks of land, than smaller islands; and that isolated habitat areas have less opportunity to regain species by re-colonization from other areas.

Many wildlife species, particularly carnivores and other wide ranging species, require large areas of suitable habitat for genetically and demographically viable populations. In addition, large islands are more likely to encompass diverse habitat types and are more easily buffered against potential impacts from surrounding developed lands. The SEAs are designed to provide habitat linkages between related habitat types (such as the Antelope Valley buttes, or the San Andreas Rift Zone wetlands), by encompassing areas of sufficient width to function as wildlife movement routes between these open space areas.

The current SEA designations provide local resources (such as sensitive species) and their habitats, as well as the seasonal support habitats for those resources, with connections to essential sustaining resource areas (such as corridor areas and hydrological systems). For example, zones of lower intensity human impacts that exist between essential habitat resources have been included in the current SEA designations, thereby helping to maintain the biotic diversity in the County. The designation of Coastal Resource Area (CRA) is given to those SEAs located with the California Coastal Zone.

SEA Selection Criteria

All of the County’s SEAs and CRAs must satisfy at least one of the six SEA selection criteria:

A. The habitat of core populations of endangered or threatened plant or animal species.

Intent of Criterion A: These areas are important in maintaining viable plant and/or animal populations for those species recognized by state and or federal resource agencies as being extremely low in numbers or having a very limited amount of suitable habitat available. The terms "endangered" and "threatened" have precise meanings defined in both state and federal law. The identification of "core population"' will be determined by the U.S. Fish and Wildlife Service (USFWS) and the California Department of Fish and Game (CDFG). The term "core population" as used here is a general biological term referring to a known and/or a viable population. Other locations of endangered or threatened plant or animal species may also occur in the County, which are not within an SEA. It should also be noted that the concept of core populations is consistent with current thinking of the USFWS and the CDFG.

This criterion is not meant to constitute a recovery program for listed species, but one element of a

more comprehensive conservation effort for the long term sustainment of listed species within the County. At the local level, recovery programs of both the CDFG and the USFWS have measures in place that can impose severe penalties for the "take" of listed species or their habitat.

- Federally Endangered: "any species which is in danger of extinction throughout all or a significant portion of its range...."
- Federally Threatened: "any species which is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range."
- State Endangered: "....a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant which is in serious danger of becoming extinct throughout all, or a significant portion, of its range due to one or more causes, including loss of habitat, change in habitat, overexploitation, predation, competition, or disease."
- State Threatened: "....a native species or subspecies of a bird, mammal, fish, amphibian, reptile, or plant that, although not presently threatened with extinction, is likely to become an endangered species in the foreseeable future in the absence of the special protection and management efforts required by this chapter." [California Code of Regulations, Title 1, Sec 670.5]

B. On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.

Intent of Criterion B: The purpose of this criterion is to identify biotic resources that are uncommon on a regional basis. The geographical region considered could be as small as the Southern California coastal plains, the Transverse Mountain Ranges, the Mojave Desert, the Southern California coastline, etc. The geographical region could also be as large as Southern California, the Pacific coast, all of California, the western United States, or even larger. The community, association, or habitat is either unique or restricted in distribution in an area larger than the political boundaries of the County (i.e., coastal sage scrub, native grasslands, or vernal pools). Resources that are limited in distribution in the region being considered, but common elsewhere, are also included under this category.

C. Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.

Intent of Criterion C: The purpose of this criterion is to identify biotic resources that are uncommon within the political boundaries of the County, regardless of their availability elsewhere. The County has a high diversity of biological components. The County and San Diego County are the only counties in the U.S. that possess coastal, montane, and desert subregions within their boundaries. It is a rich heritage that few local governments have an opportunity to preserve.

Many biotic communities that were once common in the County have been severely reduced due to urban and agricultural development. This is especially true south of the San Gabriel Mountains, and among the agricultural fields of the North County. Other biotic features have never been common.

D. Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or in the County.

Intent of Criterion D: Species or groups of species, at various points in their life cycles, tend to congregate in certain areas. These areas possess resources that are essential to the maintenance of specific wildlife species. This criterion is intended to identify those areas that are limited in distribution either regionally or in the County, and not the primary habitat of common species or groups of species.

E. Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.

Intent of Criterion E: Oftentimes scientists learn the most about a biological phenomenon by studying it at an extreme in its distribution. This frequently reveals the biological and ecological parameters under which it can survive. In addition, isolated populations and communities often are relicts of what was present in an area at some previous time, and may show genetic traits not found elsewhere in the species. These biological and ecological parameters may be useful in determining taxonomic relationships.

F. Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.

Intent of Criterion F: The intent of this criterion was to identify examples of the primary biotic resources in the County. At least one example (e.g., native grassland, valley oak savannah) of each vegetation type will be selected from the various geographical regions in the County in order to preserve basic biogeographic diversity.

SEA Descriptions

The following are detailed descriptions of each of the 21 SEAs. Descriptions of the nine CRAs follow these SEA descriptions.

Note regarding plant community classifications:

Plant communities within the SEAs were classified using standard methodology and terminology. The communities in this description correspond directly with those listed in Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California* (1986 and 1992 update). In recent years, ecologists have refined Holland's approach to define communities primarily by their constituent plant assemblages and have now widely adopted the classification system described by Sawyer, Keeler-Wolf and Evens in *A Manual of California Vegetation*, Second Edition 2009 (MCV). This has become the accepted standard recognized by the California Department of Fish and Game, the California Native Plant Society and the U.S. Fish and Wildlife Service.

The important difference between the two methods is that the earlier system's categories were based on a variety of factors, such as physiographic features, as in the case of vernal pools, or by specific plants, as in the case of coast live oak woodland, or by the use of commonly accepted terms, as in "chaparral." In the MCV, plant communities are defined with more precision as botanical alliances where one, occasionally two, particular plant species are dominant or co-dominant with a host of other possible associated plants. The MCV lists no one plant community called chaparral because in habitats of this type any one of a variety of shrubs can be dominant and influence the character of the vegetation. For example, in a location where chamise is predominant, the alliance is classified as an *Adenostoma fasciculatum* Shrubland Alliance, while close by greenbark ceanothus may emerge as the most common shrub and this is termed a *Ceanothus spinosis* Shrubland

Alliance.

The transition to the new MCV format is ongoing. Not all alliances have been fully described, and new ones are still being recognized and extensive research is in progress to define every alliance in the new MCV plant communities' format. The more familiar nomenclatures will continue to be used for the SEA Program when appropriate.

An effort has been made to conform to this new format. Descriptions and general locations of each plant community as described in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs* appear below. The plant communities correspond to Holland's *Preliminary Descriptions of the Terrestrial Natural Communities of California.* Each was considered baseline information and evaluated for the potential presence of alliances as described in the MCV. Alliances whose profiles matched the given criteria are listed. In many cases only with further investigation can the presence of some alliances be confirmed. In addition, it should be noted that not all alliances are listed within the SEA descriptions, as many alliances have yet to be defined and new alliances are still being discovered. Where species' scientific names have been updated from those used in the MCV, these are given in brackets and follow nomenclature presented in *The Jepson Manual, 2nd Edition* (Baldwin *et al*. 2012).

Status Abbreviations:

- ABC: American Bird Conservancy Green List
- AFS: American Fisheries Society categories of risk: vulnerable, threatened, or endangered;
- AWL: Audubon Watchlist
- BCC: Fish and Wildlife Service Birds of Conservation Concern
- BLMS: Bureau of Land Management Sensitive Species
- CDF: California Department of Forestry and Fire Protection Sensitive Species
- FC: Federal Candidate species
- FE: Federally listed as Endangered
- FSS: USDA Forest Service Sensitive Species
- FT: Federally listed as Threatened
- FPD: Federally proposed for delisting
- FPE: Federally proposed for listing as Endangered
- FPT: Federally proposed for listing as Threatened
- LAA: Los Angeles Audubon list of Los Angeles County's Sensitive Bird Species
- RPR: Rare Plant Rank

- SC: National Marine Fisheries Service Species of Concern
- SCD: State candidate for delisting
- SCE: State candidate for listing as Endangered
- SCT: State candidate for listing as Threatened
- SE: State-listed as Endangered
- SSC: CDFG Species of Special Concern;
- ST: State-listed as Threatened
- USBC: United States Bird Conservation Watch List
- WBWG: Western Bat Working Group: High, Medium and Low priority
- Xerces: Xerces Society Red List of Pollinators

Altadena Foothills and Arroyos SEA

Location

General

The Altadena Foothills and Arroyos Significant Ecological Area (SEA) is located in the westernmost portion of the San Gabriel Valley. This SEA includes incorporated and unincorporated areas. The SEA represents the lower elevation/urban interface portions of Millard, Alzada, Chiquita, Las Flores, Rubio, and Eaton canyons from the urban edge, to undeveloped wildland areas of the lower elevations of the Angeles National Forest.

The SEA is located within the Mount Wilson and Pasadena United States Geological Survey (USGS) 7.5' California Quadrangles.

General Boundary and Resources Description

On the west side of the Altadena Foothills and Arroyos, the western and southwestern boundaries track along the urban-wildland interface in the undeveloped areas of the Arroyo Seco, Fern, and El Prieto canyons, and the boundary pulls back around a small area of development at the northern-eastern edge of La Cañada-Flintridge. A developed area northeast of the junction of Millard Canyon and El Prieto is excluded. The SEA designation includes the undeveloped portions of sub-watersheds of the Arroyo Seco, and also encompasses undeveloped parts of drainages, including Alzada and Chiquita, which flow into the Devils Gate Reservoir of the Arroyo Seco. The Arroyo Seco is within the Los Angeles River watershed. This SEA includes portions of the cities of Pasadena and La Cañada-Flintridge, the unincorporated community of Altadena, and the Angeles National Forest. The eastern side of the southern boundary encompasses undeveloped areas of the sub-watersheds of Las Flores, Rubio and Eaton canyons, which are tributary to the Rio Hondo and historically to the San Gabriel River. Much, but not all, of the Rio Hondo catchment is diverted via flood-control channels to the Los Angeles River. The southern boundary of the SEA is bordered by developed properties. The southern boundary moves east along the urban-wildland interface to include

undeveloped parts of watersheds, which closely follow the perimeter of Devil's Gate Reservoir, in the Hahamongna Park in Pasadena. From Hahamongna Park, the SEA boundary continues east along the edge of development into the San Gabriel River watershed. The eastern border of the SEA is the eastern ridge of Eaton Canyon near the canyon mouth. A finger of the SEA extends downstream along Eaton Wash to include the Eaton Debris Basin and Reservoir. The northern boundary is formed along ridgelines within the Angeles National Forest that define the catchment of the local canyons. Within the Angeles National Forest, development is much less dense, in the form of in-holdings and Angeles National Forest leases, and is often naturally landscaped, albeit disturbed.

The chief attribute of this SEA is a high diversity of species, which is due to the SEA's position between the mountain biome and the valley biome, caused by an abrupt change of slope formed by the thrust fault complex that borders the San Gabriel Mountains. Furthermore, the SEA has as its center the dividing ridge between the two principal rivers of the Los Angeles Basin, the Los Angeles River and the San Gabriel River.

The wide range of elevation, topography, aspect, and geology represent a diverse array of physical habitats within this SEA. In general, the topography of the SEA is moderately steep to very steep, which results in a number of very narrow corridors with elevations ranging from a high of approximately 2,400 feet above mean sea level (MSL) to a low of approximately 1,200 feet above MSL. Consequently, a variety of plant communities exist, including riparian and upland shrublands and woodlands. Within these major community types, there are many vegetation series that vary according to plant species dominance.

Of particular note for this SEA is its potential to accommodate lower elevation east-west linkages. This is significant because of the constraints of development at lower elevations, the very steep terrain, and seasonal snow storms above the SEA, beginning at about 3000 feet—all of which limit potential movement for many species. There is also potential for north-south wildlife movement between the Angeles National Forest and the Verdugo Mountains via the Arroyo Seco and the San Rafael Hills. The Arroyo Seco is the eastern limit of this link and creates a potential movement corridor from the Angeles National Forest, over and under the Interstate-210. Across the Interstate-210, the linkage enters the San Rafael Hills, where blocks of habitat remain in the cities. Some are conserved in natural open space, such as the Cherry Canyon Park and Open Space Preserve of the City of La Cañada-Flintridge, just south of the County Descanso Gardens. These open spaces are interspersed with residential development and are not part of the SEA. From the San Rafael Hills, linkage potential may be traced to the west across State Route-2 and Verdugo Wash, past enclaves of residential development to access the Verdugo Mountains.

Vegetation

The variety of topography, soil types, slope aspects and water availability within the SEA creates a range of physical habitats that support numerous communities. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Brief descriptions and general locations of each major plant community present within the SEA are provided below, including oak woodland, white alder riparian woodland, chaparral, and coastal sage chaparral scrub.

<u>Oak Woodland</u>: A plant community dominated by arborescent species of the oak genus (*Quercus*). Within this SEA, oak woodlands are dominated by one of two species: coast live oak (*Quercus*

agrifolia var. *agrifolia*) and canyon oak (*Q. chrysolepis*). Understory and adjacent vegetation varies from annual grasses and forbs in level areas to shrubs where topography is steeper. Coast live oak woodland often forms a closed canopy and is scattered throughout the SEA, but is most prevalent on north-facing slopes and in drainage bottoms. The canyon oak woodland canopy is typically more open and found on steep, north-facing canyon walls.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Quercus chrysolepis* (canyon oak woodland) Woodland Alliance

White Alder Riparian Woodland: Found along perennially-flowing streams in bedrock-constrained, steep-sided canyons, which result in a fairly narrow riparian corridor. This community is dominated by white alder (*Alnus rhombifolia*), which may grow 50 to 60 feet high over a shrubby understory.

Corresponding MCV community:

- *Alnus rhombifolia* (white alder groves) Forest Alliance

Chaparral: A shrub community comprised of robust, woody, mostly evergreen species. Within this SEA, a number of chaparral series are found according to their dominant plant species. These include chamise, laurel sumac (*Malosma laurina*), ceanothus (*Ceanothus spp.*), San Gabriel scrub oak (*Quercus dumosa* var. *gabrielensis*), and mosaics of these depending on mixtures of species and elevation. These and other shrub species form dense vegetation 5 to 10 feet in height. The development of chaparral is pronounced over the hillside areas throughout the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise–white sage chaparral) Shrubland Alliance
- *Arctostaphylos glandulosa* (Eastwood's manzanita chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus leucodermis* (chaparral whitethorn) Shrubland Alliance
- *Ceanothus spinosus* (greenbark ceanothus chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Coastal Sage Scrub: A shrubland community exhibiting less robust structure that is found in this SEA. This plant community is dominated by summer-deciduous shrubs, such as California sagebrush (*Artemisia californica*), California brittle bush (*Encelia californica*), white sage (*Salvia apiana*), black sage (*S. mellifera*), and California buckwheat (*Eriogonum fasciculatum*). It also forms

dense stands, which grow three to four feet in height. Within this SEA, it is generally found in scattered patches, which are highly integrated with mixed chaparral. This plant community is generally found on hotter, drier south-facing slopes, lower ridges and small flats, which are primarily located in the lower elevation hillsides of the SEA.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Wildlife

Wildlife populations within the SEA are diverse due to the area's vegetative diversity and its location within and adjacent to the Angeles National Forest. The analysis of invertebrates is severely limited due to the lack of collection-related data; however, the SEA is likely to support healthy populations of a diverse assortment of invertebrate species based on its undisturbed nature and variety of habitats. Amphibians are present within the aquatic and semi-aquatic habitats along the Arroyo Seco, Millard Canyon, Eaton Canyon, and tributary drainages. Reptile abundance and diversity are characteristic of the habitats present, although areas closer to urban development along the southern boundaries of this SEA are likely to be degraded due to edge effects.

Bird use, diversity, and abundance within the SEA are high for several reasons. In general, this SEA provides habitat for a wide range of shrubland, woodland, and riparian species that occur at varying elevations. In particular, the riparian habitats found in drainages throughout this SEA provide essential habitat for riparian-obligate and riparian-favoring species. In addition, a number of migratory birds use this area to move across the northern portion of the Los Angeles Basin. These include a wide spectrum of birds including song birds, waterfowl and raptors.

Similarly, the mammalian fauna is very diverse and abundant. Many mammalian species, including wide-ranging, large mammals, such as black bear, mountain lion, bobcat, coyote and deer are expected to use the SEA to forage. These animals are likely to den within the more isolated areas within the Angeles National Forest; however they are known to roam the SEA for foraging and dispersal opportunities.

Wildlife Movement

Wildlife movement within the SEA takes on two major forms. First, due to the extremely steep intervening topography, considerable movement of wildlife up and down the drainages, which course through this SEA to connect the forest interior with foothill areas, is expected. Consequently, this type of movement occurs on a seasonal basis, particularly for large mobile mammals that typically meet their full range of habitat needs over broad areas.

The second major type of movement occurs across the flanks of the foothills in an east-west direction. Particularly for riparian-obligate and riparian-favoring migratory birds, the corridor linking lower elevation riparian habitats in the SEA are of high importance and heavily utilized.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. Sensitive communities include hairy leaf ceanothus chaparral, holly leaf cherry chaparral, chamise-white sage chaparral, California brittle bush scrub, white sage scrub, California buckwheat-white sage scrub, and oak riparian woodland. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) RPR 2.2
- San Gabriel manzanita (*Arctostaphylos glandulosa* ssp. *gabrielensis*) RPR 1B.2

- Braunton's milk-vetch (*Astragalus brauntonii*) RPR 1B.1, FE
- Nevin's barberry (*Berberis nevinii*) RPR 1B.1, SE, FE
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- San Gabriel oak (*Quercus dumosa* var. *gabrielensis*) RPR 4.2
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Coast range newt (*Taricha torosa*) SSC
- Western pond turtle (*Emys marmorata*) BLMS, SSC, FSS
- Silvery legless lizard (*Anniella pulchra pulchra*) SSC, FSS
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, SSC, FSS
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Coastal rosy boa (*Lichanura trivirgata roseofusca*) FSS
- San Bernardino mountain kingsnake (*Lampropeltis zonata parvirubra*) SSC, FSS
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- San Bernardino ringneck snake (*Diadophis punctatus modestus*) FSS
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, SSC, FSS
- American peregrine falcon (*Falco peregrinus anatum*) FD, SD, CDF, CDFG Fully Protected, BCC
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, SE, ABC
- Least Bell's vireo (*Vireo bellii pusillus*) FE, SE, ABC

- Coastal California gnatcatcher (*Polioptila californica californica*) FT, ABC, SSC
- American badger (*Taxidea taxus*) SSC
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High Priority
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG: Medium-High Priority
- Pallid bat (*Antrozous pallidus*) BLMS, SSC, FSS, WBWG: High Priority
- Silver-haired bat (*Lasionycteris noctivagans*) CDFG Special Animals List, WBWG Medium Priority
- Hoary bat (*Lasiurus cinereus*) CDFG Special Animals List, WBWG: Medium Priority
- Western yellow bat (*Lasiurus xanthinus*) SSC, WBWG: High Priority
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC

Regional Biological Value

The SEA meets important SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE ALTADENA FOOTHILLS AND ARROYOS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	None within this SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA is designating one of the principle ecotones of the Southern California coastal areas: the area where the sediment of the coastal alluvial fans from the mountain streams and drainages is exiting the abrupt upthrust rock of the mountains. Here one finds the biotic communities of the mountains meeting the communities of the coastal plain areas, combining with the organisms that are only found at the junction. The natural habitats of this kind of biological area are fast dwindling as urban communities expand to the limits of easily buildable space.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA is designating one of the principle ecotone areas of the County coastal exposure: the area where the sediment of the alluvial fans from the mountain streams and drainages is adding to the mile-deep sediments of the Los Angeles Basin, as the watercourses exit the abrupt upthrust rock of the San Gabriel Mountains. It is an area where one can often encounter flora that is characteristic of the Peninsular Ranges to the south and flora of the coastal ranges and Sierra Nevada

Criterion		Status	Justification
			to the north, among typical flora of the Transverse Ranges. The SEA contains prime examples of coastal sage scrub and other kinds of chaparral, riparian oaks, woodlands of the canyon oak of the mountains, woodlands of the coast live oak, which occurs both in the lower mountains and the valleys, good stands of the San Gabriel endemic oak (*Quercus dumosa* var. *gabrielensis*), diverse and beautiful flora characteristic of the continually changing beds of the mountain streams, both perennial and intermittent, and the wildlife that reside in these various habitats.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The SEA provides a low-elevation constrained corridor. The SEA serves as the only corridor to provide interacting component habitat areas for species to feed, rest, and migrate from low basin and foothill elevations to the sub-alpine elevations of the high San Gabriel Mountains.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Not met	None within this SEA.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Areas encompassed within the SEA represent the only remaining stands of low-elevation foothill scrub, chaparral, and canyon woodland communities within the north San Gabriel Valley. These communities once extended throughout what are now the communities of the north San Gabriel Valley, bridging the transition between high chaparral on the southern slope of the San Gabriel Mountains to the alluvial fans extending beneath the mountains to the coastal basin.

In conclusion, the area is an SEA because it contains (B-C) a good example of the biotic communities typical of the area where the abrupt upthrust of the mountains meets the alluvial fans of the valleys, a natural habitat that is limited in availability in the County and the coastal Southern California region; (D) it has a constrained connective corridor area near the Devil's Gate Dam where the freeway underpasses provide access between the San Rafael Hills and the San Gabriel Mountains; and (F) it supports intact remant stands of low-elevation chaparral and scrub communities that were once more widespread within the region.

Antelope Valley SEA

Location

General

The Antelope Valley Significant Ecological Area (SEA) is located in the central portion of the

Antelope Valley, primarily east of the cities of Palmdale and Lancaster, within a predominantly unincorporated area of the County. The SEA is focused on the principal watercourses of the area: Little Rock Creek and Big Rock Creek and tributaries, such as Mescal Creek. The California Audubon recognizes the area of Edwards Air Force Base as a Globally Important Bird Area (IBA), which is visited by tens of thousands of migrant birds during the spring and fall migratory seasons, and supports the breeding of rare and endangered birds during the spring and summer months.

The SEA is located, at least partially, in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Rosamond, Rosamond Lake, Redman, Rogers Lake S, Jackrabbit Hill, Lancaster E, Alpine Butte, Hi Vista, Adobe Mountain, Palmdale, Littlerock, Lovejoy Butte, El Mirage, Pacifico Mountain, Juniper Hills, Valyermo, and Mescal Creek.

General Boundary and Resources Description

Watercourses and water features, such as dry lakes and springs, are the focus for desert life and central to connectivity and biodiversity in this region. The SEA was delineated to emphasize the importance of the Little Rock Creek and Big Rock Creek watersheds to the surface and subsurface hydrology of the Antelope Valley and to the dry lakes. The western portion of the SEA extends along the margin of Little Rock Creek Wash and floodplain zone, while the eastern margin follows a tributary of Big Rock Creek, which is Mescal Creek Wash and its tributaries. The origins of the watercourses in the Angeles National Forest are an important aspect of their diversity and connectivity, and the importance of the diverse forest vegetation of this SEA is discussed below. The SEA includes several major buttes and numerous minor ones, which have highly diverse biota along with diverse desert habitats, which range from sand dunes formed from the wind-blown dust that the buttes collect, to rocky crags, which are home to various raptors. The SEA includes the County's portion of the watershed basin for dry lakes, which are the destination for the watercourses. There are three dry lakes and their adjacent plains (protected as part of Edwards Air Force Base) included in the SEA: Rosamond Dry Lake with the adjacent Piute Ponds, Buckhorn Lake, and Rogers Lake. These lakes and ponds are often flooded during the rainy winter-spring seasons, and are the principal resting areas on the Pacific Flyway. The northeastern portion of the SEA encompasses some agricultural cropland (portions of which are fallow) and dispersed rural residential uses; however, the underlying hydrology of the washes remains intact throughout the entire SEA.

Three main watercourse segments originate in the San Gabriel Mountains and flow through the Antelope Valley to dry lakes near the northern County boundary: 1) Little Rock Creek; 2) Big Rock Creek; and 3) Desert-Montane. Desert-Montane centers on Mescal Creek and includes adjacent drainages. The flows of all three drainages are subsurface for much of the year and may be on the surface during rain and snowmelt.

The Little Rock Creek segment (the westernmost segment), goes north from Little Rock-Palmdale Dam as its southern barrier. Upstream from the reservoir is critical habitat for the endangered arroyo toad (*Anaxyrus californicus* FE, SSC). The toad could occur from time to time in the downstream area of the SEA. Heading north to Mount Emma Road, the boundaries follow the flood zone of the Little Rock Creek Wash and also incorporate some of the vegetated slopes that drain to the wash. North from Mount Emma Road, the boundaries follow Federal Emergency Management Agency (FEMA) boundaries except where the braiding is clearly outside of the FEMA boundary, such as near Avenue U, between Avenue S and Avenue T, and north of Avenue Q. In these areas, the line follows the edge of the braiding. North of Avenue M, the lines follow FEMA boundaries to Avenue F. On the west side, just south of Edwards Air Force Base, the SEA boundary heads west to incorporate the conservation area identified by the West Mojave (WEMO) Plan for alkali mariposa

lily. North of Avenue F, the eastern boundary follows the FEMA boundary to the Edwards Air Force Base boundary.

All of Edwards Air Force Base that is in the County is included in the SEA because the restricted entry and use protect the dry lakes and their neighboring areas. Many desert plants and wildlife species once found broadly across the Antelope Valley are now found only or primarily within Edwards Air Force Base. The ponds and dry lakes have distributed habitat of marshy alkali grassland, alkali flats, and cattail and bulrush marsh augmented by wastewater treatment facilities that have additional ponds. Some of the nesting rare and uncommon birds include white-faced ibis (*Plegadis chihi*), tricolored blackbird (*Agelaius tricolor*), redhead (*Aythya americana*), gadwall (*Anas strepera*), yellow-headed blackbird (*Xanthocephalus xanthocephalus*), least bittern (*Ixobrychus exilis*), and federally-threatened western snowy plover (*Charadrius alexandrinus nivosus*).

The Big Rock Creek area has western and eastern segments in the SEA. The western segment of the the SEA begins near the northern boundary inside the Angeles National Forest and heads north through and out of the Angeles National Forest along Pallett Creek. The SEA includes parts of Cruthers and Holmes creeks near their junctions with Pallett Creek. SEA boundaries follow the braided stream channel toward the confluence with Big Rock Creek. From the aqueduct at Big Rock Creek to Edwards Air Force Base, the western boundary line follows the FEMA boundaries along the western side of Big Rock Creek braids, including Alpine Butte, and joining to the Little Rock Creek segment along Edwards Air Force Base. On the east segment of Big Rock Creek, the SEA boundaries head north from the Angeles National Forest headwaters of Dorr Canyon (a Big Rock Creek tributary) and the headwater area of Big Rock Creek near State Route-2. The boundaries travel through the Angeles National Forest and follow the wash area of the streams toward the confluence with Pallett Creek. The Angeles National Forest floodplain of the widened area of South Fork of Big Rock Creek is included in the SEA.

South Fork of Big Rock Creek is part of the federally-designated critical habitat of the mountain yellow-legged frog (*Rana muscosa*, FE, SE). This frog is known in the County from only a few high-mountain streams in the San Gabriel Mountains. Climate change and other global factors, such as air pollution, are suspected to be responsible for its endangered status.

Another broad area of the San Andreas Fault Zone near the Valyermo Ranch follows the FEMA boundaries and includes a nesting area for gray vireos near Bobs Gap. Between the Angeles National Forest and the aqueduct, the SEA boundaries follow FEMA boundaries. The eastern boundary follows the FEMA boundary along the main course of Big Rock Creek to the vicinity of Avenue Q East, where it diverges to include sections that have the main area of Lovejoy Buttes. At Avenue O, the eastern boundary returns to the FEMA boundary, and continues northeastward along the FEMA boundary to skirt development in Lake Los Angeles. In the vicinity of Avenue M, the eastern boundary goes eastward through areas of natural vegetation (from about 100th Street to 215th Street) to include Rocky, Piute, and Saddleback buttes, and connect with the Desert-Montane transect segment.

The southern side branch of the Desert-Montane transect starts in the Angeles National Forest along the ridge of Table Mountain at the San Bernardino-Los Angeles County line. Table Mountain is known for its diverse flora, which includes desert and mountain elements, and some unusual limestone-obligate species. The SEA southern boundary along the ridgeline gradually becomes the western boundary as it skirts the camp developments along the southern base of Table Mountain. The boundary turns north along the western ridge of the Mescal Creek drainage, crossing the California Aqueduct with the State Route-138. The Mescal Creek flora is known to be highly diverse,

and the SEA boundaries include much of the Inface Bluff on the west side of Mescal Creek, which adds further diversity to Mescal Creek habitats. From the aqueduct to Avenue R, the western boundary buffers the westernmost desert drainage by 200 feet, which protects the braided area of the watercourse. This part of the SEA includes Black Butte and the Three Sisters (buttes), many smaller unnamed buttes, as well as Mescal and Theodore Payne County wildlife sanctuaries. The east side of the transect is the San Bernardino-Los Angeles County line. At about Avenue U East, the eastern boundary veers off the San Bernardino-Los Angeles County line to the north-northwest, buffering the Puzzle Creek watercourse by about 200 feet, which protects the braiding of the easternmost drainages. Near Avenue R, the boundary trends north, and goes north-northwest near Avenue P to include Moody Butte, lesser unnamed rises, and Blue Rock Butte.

The Desert-Montane segment largely avoids drainages that flow into and out of the Lake Los Angeles community, but the transect includes diffuse watercourses on the south side of Saddleback Butte, Saddleback Butte and the surrounding Saddleback Butte State Park, the Antelope Valley Indian Museum State Park at the base of Piute Butte, and Piute Butte. At about Avenue H and 70th Street East, the boundary turns to the northeast following natural vegetation to the County boundary near Avenue C. Here the boundary turns north along the line to where San Bernardino, Kern and Los Angeles counties meet. This northeastern part of the SEA has WEMO conservation areas for the threatened desert tortoise and state-threatened Mojave ground squirrel. The northeastern area has some BLM land and the County Phacelia Wildlife Sanctuary, which is also County Wildflower Preserve A. The SEA includes large parts of County Wildflower Preserve F.

On Edwards Air Force Base, north to south between Avenues B and E East, and west to east between 140th Street East and the San Bernardino-Los Angeles County line, there is federally-designated critical habitat for the state and federally-threatened desert tortoise (*Gopherus agassizii*). At 190th Street, the critical habitat widens to extend north beyond the County and the SEA into Kern County. At 200th Street, the critical habitat widens to the south to extend to Avenue H and then goes east across the San Bernardino-Los Angeles County line. The desert tortoise critical habitat area on Edwards Air Force Base is included in the SEA, and much of the SEA area north of Avenue H in the eastern drainages of the SEA is designated critical habitat for the tortoise.

The SEA traverses the Antelope Valley from the foothills of the San Gabriel Mountains, to the low elevations of the dry lake basins, and its expanse and considerable topographical relief is reflected in its relatively high floral and faunal diversity. The SEA includes playa lake, alkali marsh, alluvial fan scrub, a mosaic of xeric desert scrubs, Joshua tree woodland, desert riparian woodlands, juniper scrub, pinyon pine, chaparral and mixed conifer, oak, and riparian communities of higher elevations. Transitional zones (ecotones) between these communities often contain unusual species compositions, such as pinyon pine, juniper and Joshua trees together, or Joshua trees adjacent to cottonwood forest.

Edwards Air Force Base has the only good stands of mesquite (*Prosopis glandulosa*) remaining in the County. It has areas of Mojave spineflower (Chorizanthe spinosa), creosote bush scrub, alkali sink, and the transition vegetation between the two. Rosamond Lake has the best example of the shadscale scrub and alkali sink biotic communities in the County. Shadscale scrub needs heavy soil with underlying hardpan between 3000-6000 feet elevation, which is unusual in the County, and more common in the north Mojave Desert and Owens Valley. In addition, the playa has the southernmost extension of the Great Basin kangaroo rat (*Dipodomys microps*), which is an isolated geographic population of scientific interest.

The southernmost portions of the three “legs” of the SEA lie within the Angeles National Forest, and

include the upper tributary watersheds and streams for Little Rock, Big Rock, and Mescal creeks. These areas support the mixed conifer, which are multi-species oak woodlands that are common to the middle-elevation zones on the north face of the San Gabriel Mountains. The creeks are higher energy systems at those elevations, as they collect water from the surrounding terrain, and are typically lined with woodlands of alder, willow, sycamore and cottonwood, with varying densities and with various compositions of species.

As the creeks drop north of the pressure ridges of the San Andreas Fault Zone, they lose gradient and widen, and most of the flow is beneath the surface, except during high energy storms or in the spring (depending upon rainfall totals in the watersheds). The vegetation becomes sparser and less evenly distributed along the channel margins. Crossing the lowlands of the Antelope Valley, the channels support a variety of desert scrub vegetation within the alluvial plains. Where the alluvial plains are wide and shallow, cottonwood-willow woodland and sycamore woodland vegetation communities often occur within the overall floodplain on stable terraces; around oxbow flow zones in the Antelope Valley; or where the groundwater table is replaced or augmented by agricultural runoff. The surrounding upland habitats are primarily desert scrubs, including creosote and chenopod scrubs, sand sheets (chiefly around the buttes), and Joshua tree woodland. Intact Joshua tree woodland, with native substrates present, supports a relatively high diversity of annual wildflowers, reptiles and mammals. The Joshua trees also provide nest sites for many desert and migratory bird species.

Lovejoy, Alpine, Piute, Black and Saddleback buttes, along with other, smaller unnamed buttes, form most of the topographical relief within the SEA. These areas offer different ecological conditions that are associated with rock shelter, perching sites, nesting sites, denning areas, wind protection and sand sheet accumulation areas. Local and migratory bat species roost and reproduce in the caves and crevices of the butte formations. The higher buttes provide the only local nesting sites for owls and other birds of prey.

Alpine Butte is the least disturbed butte in the County, with excellent stands of Joshua tree woodland and creosote bush scrub, and impressive wildflower displays when rainfall creates appropriate conditions. Lovejoy Butte has Joshua tree woodland and creosote bush scrub, with a central wind-blown sand community for a good mixture of rock and sand habitats. In addition, the close proximity of Lovejoy Butte to Big Rock Creek Wash increases the diversity of habitats in the area. It also suffers from impact from the Lake Los Angeles community, which borders the butte on three sides. The clustering of buttes in the SEA may be important to the abundant, diverse wildlife that inhabits the various vegetation communities around and in the buttes. Saddleback Butte and Piute Butte together are protected as a state park, but Saddleback Butte is also subject to development for campsites and hiking trails. Piute Butte has a prehistoric site that may protect it from much future recreational development. All of the buttes harbor diverse wildlife and flora. Most of them are critical habitat for the state and federally-threatened desert tortoise. Some buttes within the desert tortoise's critical habitat are not included in the SEA.

The acitive and fallow open agricultural lands support a diversity of wildlife species, which essentially regard the fields and ditches as irrigated desert. Birds of prey frequently hunt over the open agricultural areas, including fallow fields; wide-ranging predators also find excellent hunting conditions in and around agricultural areas. A spectrum of local and migratory bat species feed over the irrigated fields in the spring and summer, when insect numbers are the highest, and at least one sensitive bat species, the pallid bat, forages in open scrub or ruderal desert habitats.

The northern portion of the SEA contains several unique habitat types, including mesquite bosque

(threatened locally by lowering water tables and harvest for firewood), clay pan pools, vernal pools, alkali grasslands, alkali and freshwater marshes, and permanent ponds. Hundreds of bird species have been recorded from the pond and marsh habitats around the dry lakes and ponds, and numerous species nest on the playa margins or in the associated riparian habitats. The open creosote scrub and other xeric habitats on the slopes surrounding the lake playas serve as important wintering areas for many raptor species, as well as large numbers of song birds.

Vegetation

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEAs are discussed in the Sensitive Biological Resources section.

Desert Scrub: A comprehensive term for a number of relatively low-stature, sparse-cover communities of shrubs and sub-shrubs that commonly occur on open, sandy soils where groundwater is inaccessible, except to a few deep-rooted species. Dominants include Great Basin sagebrush, antelope bush, creosote bush, several species of *Atriplex* (saltbush), rabbitbrush, cheesebush, sages, winterfat, and burrobrush, which are often with one or more perennial grasses (needlegrasses, sand drop-seed) interspersed. Formations dominated by saltbushes and other related taxa, which may be particularly common on alkaline soils, are sometimes called chenopod scrubs, in reference to the family *Chenopodiaceae*, which includes most of the dominant species. Within the SEA, variations on this community often intergrade with, or form understory within, juniper woodland and Joshua tree woodland. Variations are also found on lower slopes, around the buttes and on the adjacent Antelope Valley floor. These formations also occur extensively within the Desert-Montane transect segment of the SEA.

Corresponding MCV communities:

- *Krascheninnikovia lanata* (winterfat scrubland) Shrubland Alliance
- *Suaeda moquinii* ([*Suaeda nigra*] bush seepweed scrub) Shrubland Alliance
- *Atriplex spinifera* (spinescale scrub) Shrubland Alliance
- *Pluchea sericea* (arrow weed thickets) Shrubland Alliance
- *Artemisia tridentata* (big sagebrush) Shrubland Alliance
- *Artemisia tridentata* ssp. *vaseyana* (mountain big sagebrush) Shrubland Alliance
- *Atriplex canescens* (fourwing saltbush scrub) Shrubland Alliance
- *Atriplex confertifolia* (shadscale scrub) Shrubland Alliance
- *Atriplex hymenelytra* (desert holly scrub) Shrubland Alliance
- *Atriplex lentiformis* (quailbush scrub) Shrubland Alliance
- *Acacia greggii* (catclaw acacia thorn scrub) Shrubland Alliance

- *Ericameria paniculata* (black-stem rabbitbrush scrub) Shrubland Alliance
- *Ambrosia salsola* (cheesebrush scrub) Shrubland Alliance
- *Baccharis salicifolia* (mulefat thickets) Shrubland Alliance
- *Larrea tridentata* (creosote bush scrub) Shrubland Alliance
- *Larrea tridentata-Ambrosia dumosa* (creosote bush-white burr sage scrub) Shrubland Alliance
- *Atriplex polycarpa* (allscale scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Eriogonum heermannii* (Heermann's buckwheat patches) Provisional Shrubland Alliance
- *Eriogonum wrightii* (Wright's buckwheat patches) Dwarf Shrubland Alliance
- *Ephedra californica* (California joint fir scrub) Shrubland Alliance
- *Allenrolfea occidentalis* (iodine bush scrub) Shrubland Alliance
- *Sarcobatus vermiculatus* ([*Sarcobatus baileyi*] greasewood scrub) Shrubland Alliance
- *Yucca brevifolia* (Joshua tree woodland) Woodland Alliance
- *Prosopis glandulosa* (mesquite bosque) Woodland Alliance
- *Ambrosia salsola* (cheesebush scrub) Shrubland Alliance
- *Grayia spinosa* (spiny hop sage scrub) Shrubland Alliance
- *Castela emoryi* (crucifixion thorn stands) Shrubland Special Stands
- *Ericameria nauseosa* (rubber rabbitbrush scrub) Shrubland Alliance
- *Gutierrezia sarothrae* (broom snake weed scrub) Provisional Shrubland Alliance
- *Ambrosia dumosa* (white bursage scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance
- *Purshia tridentata* (bitter bush scrub) Shrubland Alliance
- *Artemisia californnica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance

Chaparral: Consists of broad-leafed or needle-leafed, sclerophyllous (hard-leafed), medium height to tall shrubs that form a dense cover on steep slopes that are usually below 5,000 feet in Southern California. Dominant species found within this community include scrub oaks (several species), chamise, manzanita, wild lilac, toyon, and western mountain-mahogany. This plant community occupies internal slopes, particularly on north-facing exposures, within the higher elevations of the SEA. Shrubs are frequently interspersed as understory formations within oak and conifer woodlands.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia mellifera* (chamise-black sage chaparral) Shrubland Alliance
- *Arctostaphylos glandulosa* (Eastwood's manzanita chaparral) Shrubland Alliance
- *Arctostaphylos glauca (*bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus cuneatus* (wedge leaf ceanothus chaparral, buck brush chaparral) Shrubland Alliance
- *Ceanothus greggii* (cup leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus crassifolius* (hoary leaf ceanothus chaparral) Shrubland Alliance
- *Lotus scoparius* ([*Acmispon glaber*] deer weed scrub) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Prunus emarginata* (bitter cherry thicket) Provisional Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Grassland Communities: Consist of low, herbaceous vegetation that is dominated by grasses. This community also harbors native forbs and bulbs, as well as naturalized annual forbs. Only fragmentary representatives of native grasslands exist within the SEA, with mostly sand drop-seed colonies on relatively less-disturbed sandy substrates around the buttes. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species within this “community,” which is a ruderal formation and not a true habitat or community, include oats, bromes, foxtail chess and other grasses, wild mustards and other disturbance-favored “weedy” taxa. Non-native grasslands and other ruderal formations occur in small patches throughout the SEA and cover much of the land left fallow from agriculture.

Corresponding MCV communities:

- *Avena (barbata, fatua)* (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica (nigra)* and other mustards (upland mustards) Semi-Natural Herbaceous Stands

- *Bromus (diandrus, hordeaceus)-Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands

- *Bromus rubens-Schismus (arabicus, barbatus)* ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands

- *Centaurea (solstitialis, melitensis)* (yellow star-thistle fields) Semi-Natural Herbaceous Stands

- *Lolium perenne* ([*Festuca perennis*] perennial rye grass fields) Semi-Natural Herbaceous Stands

Wildflower Field: An amorphous mix of herbaceous plants noted for conspicuous annual wildflower displays, although noteworthy displays do not occur every year and appear to depend on rainfall patterns. Dominance varies from site to site and from year to year at any one particular site. Species frequently present include California poppy, tidy tips, dove lupine, valley tassels, purple owl's clover, and broad-leaved gilia. Within the SEA, prominent wildflower fields occur on the south facing slopes of the Tehachapi Mountains and the buttes.

Corresponding MCV communities:

None at this time.

Southern Willow Scrub: A riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets that occur within and adjacent to seasonal or permanent watercourses. The "scrub" habitat is generally sub-mature, which is a state that is often maintained by frequent heavy over-flooding–and may attain woodland or forest stature if undisturbed for several decades. Dominant species of this community within the SEA are mulefat, sandbar and arroyo willow. Within the SEA this community primarily occurs along portions of the tributary drainages to Little Rock and Big Rock creeks, but elements of it also may occur around the periphery of ponds and marshes.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance

- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Joshua Tree Woodland: Dominated by Joshua tree, which usually is the only arborescent species, and with numerous smaller shrub species interspersed. Shrub species commonly associated with Joshua tree woodland habitat include creosote bush, Great Basin sagebrush, California buckwheat, saltbush, horsebrush, desert almond, and antelope bush. Joshua tree woodland is present in varying densities and age formations over much of the less-disturbed uplands around the two primary washes, and throughout the Desert-Montane transect.

Corresponding MCV communities:

- *Yucca brevifolia* (Joshua tree woodland) Woodland Alliance

Juniper Woodland: An open formation dominated by California juniper, often with an understory of desert scrub species, and sometimes mixed with chaparral or Joshua tree woodland at middle elevations. This community is found on lower slopes in the San Andreas Fault Zone.

Corresponding MCV communities:

- *Juniperus californica* (California juniper wooddland) Woodland Alliance
- *Juniperus grandis* (mountain juniper woodland) Woodland Alliance
- *Juniperus osteosperma* (Utah juniper woodland) Woodland Alliance

Mixed Conifer-Oak Woodland Formations: Typically consist of an overstory of oaks (canyon, interior live) intermixed with bigcone Douglas fir, incense cedar, and yellow pine of varying densities and compositions, depending on slope orientation, substrates, and fire history. Understory vegetation is usually dominated by chaparral species, such as scrub oak, manzanita, and wild lilac. This community occurs only in canyons in the higher elevations of the SEA.

Corresponding MCV communities:

- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance
- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Quercus wislizenii* (interior live oak woodland) Woodland Alliance
- *Pinus coulteri* (Coulter pine woodland) Woodland Alliance
- *Pseudotsuga macrocarpa-Quercus chrysolepis* (bigcone Douglas-fir forest) Forest Alliance

Southern Cottonwood-Willow Riparian Forest: A broad-leafed winter-deciduous habitat that is dominated by Fremont cottonwood, in places mixed with willow or western sycamore. Southern cottonwood-willow riparian forest (or woodland) occurs within the SEA along segments of Little Rock Creek and Big Rock Creek, and rows of trees line the periphery of irrigated sites, lakes and ponds.

Corresponding MCV communities:

- *Populus fremontii* (Fremont cottonwood forest) Forest Alliance
- *Populus trichocarpa* (black cottonwood forest) Forest Alliance

Mesquite Bosque: Consists of dense thickets of mesquite trees, usually found where groundwater resources are sufficient in quantity and depth to support the trees. There are remnant patches of this habitat throughout the northern portion of the SEA, but most of the trees have declined or died as water tables have been drawn down and mesquite wood has been harvested. Several large, healthy stands of this habitat persist around the southern perimeter of the dry lakes.

Corresponding MCV communities:

- *Prosopis glandulosa* (mesquite bosque, mesquite thicket) Woodland Alliance

Freshwater Marsh: Develops in areas of still or slow-moving permanent freshwater. This community is dominated by the perennial, emergent cattail, which may reach heights of seven feet and grow in densities that form a closed canopy. Bulrush may also occur or be dominant within freshwater marsh. This formation occurs in scattered ponds and irrigation ditches throughout most of the SEA,

but does form large, natural habitat areas at Piute Ponds and other pond sites around the dry lakes.

Corresponding MCV communities:

- *Phragmites australis* (common reed marshes) Herbaceous Alliance and Semi-Natural Stands
- *Schoenoplectus americanus* (American bulrush marsh) Herbaceous Alliance
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha (angustifolia, domingensis, latifolia)* (cattail marshes) Herbaceous Alliance
- *Lemna (minor)* and relatives (duckweed blooms) Provisional Herbaceous Alliance

Alkali Marsh: Similar to the freshwater marsh described above, but with more salt-tolerant plant species present. Species associated with this community include cattail, saltgrass and common reed. Alkali marsh occurs in small segments along Amargosa Creek, Edwards and Piute ponds, and other wetland areas scattered along the San Andreas Fault Zone.

Corresponding MCV communities:

- *Sarcobatus vermiculatus* ([*Sarcobatus baileyi*] greasewood scrub) Shrubland Alliance
- *Schoenoplectus americanus* (American bulrush marsh) Herbaceous Alliance
- Sporobolus airoides (alkali cordgrass marsh) Herbaceous Alliance
- *Allenrolfea occidentalis* (iodine bush scrub) Shrubland Alliance
- Atriplex lentiformis (quailbush scrub) Shrubland Alliance
- *Suaeda moquinii* ([*Suaeda nigra*] bush seepweed scrub) Shrubland Alliance

Desert Alluvial Wash and Alluvial Fan Scrub: Generally consist of a mixture of shrubs, which colonize and persist within infrequently scoured and flooded terrain such as floodplains, alluvial plains, or along seasonal streams. It is sometimes known as floodplain sage scrub. The dominant shrub in most washes is scalebroom, but Great Basin sagebrush, rabbitbrush, sweetbush, and chaparral yucca also may occur in the habitat type. This vegetation type is common throughout the alluvial plains and washes in the SEA.

Corresponding MCV communities:

- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance

Disturbed or Barren Areas: These are areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA includes non-native grasses and “weedy” herbaceous species, native and non-native, including doveweed, mustards, telegraph weed, Russian thistle, dock, yellow star thistle, tocalote, Australian saltbush, and cocklebur. Disturbed areas occur throughout the SEA on fallow agricultural sites, around active agriculture and residential developments, along paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Corresponding MCV Communities:

None at this time.

Wildlife

Wildlife within the SEA is moderately diverse and abundant, commensurate with the extensive acreage of natural open space and the relative diversity of habitat types. While a few wildlife species are entirely dependent upon a single vegetative community, the entire mosaic of vegetation communities within the SEA and adjoining areas constitutes a continuum of functional ecosystems supporting a wide variety of wildlife species, both within the SEA boundaries and as a part of the regional ecosystem.

Analysis of invertebrates is limited by a lack of specific data; however, the size of the SEA and diversity of habitats present is considered sufficient to encompass healthy populations of a large number of invertebrate species, in excess of 1,000 terrestrial species. The wetlands and aquatic habitats within the SEA support diverse faunas of freshwater and alkaline pool arthropods, including native fairy shrimp, brine flies, and tiger beetles. Insect orders are particularly well-represented taxonomically, with moderate levels of species endemism including *Coleoptera*, *Diptera*, Hymenoptera and nocturnal *Lepidoptera*.

Amphibians generally are not present within desert habitats, except where surface hydrology persists throughout the year or breeding season. A limited number of species may be abundant in desert riparian areas. The more moist woodland areas and canyon bottoms of the montane portions of the SEA support abundant populations of more common amphibians, and in Little Rock Creek, the southwestern arroyo toad. Several species of salamander may also be present within the mesic upper reaches of the creek drainages. Open desert scrub habitats generally support diverse reptile populations, and the overall herpetofauna of the SEA includes numerous lizard and snake species, along with western pond turtle and California desert tortoise.

Bird diversity within the SEA is related to habitat opportunities for year-round residents, seasonal residents, and migrating raptors and song birds. Open xeric scrub hosts a suite of birds typical of such sites over a wide range of deserts, while the transition zones in the southern portion of the SEA attract species with desert and montane habitat preferences. The most productive sites for birds are the riparian corridors and freshwater systems, which attract large numbers of migrants during spring and fall, and provide abundant cover and food resources for songbird breeding use. The desert riparian woodlands and rocky buttes provide nest sites for raptors, many of which forage widely over desert scrub and agricultural lands. The playa lakes and seasonal pools, along with the ponds near the dry lakes, attract large numbers of migrating shorebirds, waders and waterfowl, and provide important winter foraging and sheltering areas for waterfowl and birds of prey.

Wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources.

Wildlife Movement

The SEA extends from the Angeles National Forest to the playa lakes within Edwards Air Force Base, encompassing most of the two largest drainages exiting the northern slope of the San Gabriel Mountain range. The geographical features of the SEA serve as a major habitat linkage and

movement corridor for all wildlife species within its vicinity and in an intergenerational sense, many of the plant species. Ecologically generalist species (mountain lion, bobcat, coyote, gray fox, etc.) have the ability to move across such vast areas and through changing habitat types. For such species, the SEA may serve as an important system for long-term and genetic exchange among populations. For smaller or less-mobile species or taxa, which are narrowly restricted in their habitat needs, the SEA can serve as a broad linkage zone, in which individual movement can take place during seasonal population dispersal or over generations. This provides essential genetic exchange within and between metapopulations. The two drainages, combined with the upland terrestrial Desert-Montane transect portion of the SEA, ensure linkage and direct movement areas for all of the wildlife species present within the County portion of the Antelope Valley.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The desert tortoise and mountain yellow-legged frog have critical habitat in this SEA. The arroyo toad has nearby critical habitat and may be present in the SEA.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The sensitive communities include: mesquite bosque, Joshua tree woodland, desert grassland, southern willow scrub, southern cottonwood-willow woodland, fresh-water swamp, alkali meadow, Mojave riparian forest, and desert dry wash woodland. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Mount Gleason Indian paintbrush (*Castilleja gleasoni*) RPR 1B.2
- Desert cymopterus (*Cymopterus deserticola*) RPR 1B.2
- Barstow woolly sunflower (*Eriophyllum mohavense)* RPR 1B.2
- Mason's neststraw (*Stylocline masonii*) RPR 1B.1

- Robinson's pepper grass (*Lepidium virginicum* var. *robinsonii,*[*Lepidium virginicum* ssp. *menziesii*]) RPR 1B.2
- Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) RPR 1B.2
- Robbins' nemacladus (*Nemacladus secundiflorus* var. *robbinsii),* RPR 2.2
- Sagebrush loeflingia (*Loeflingia squarrosa* var. *artemisiarum*) RPR 1B.2.2
- San Antonio milk-vetch (*Astragalus lentiginosus* var. *Antonius*) RPR 1B.3
- Big Bear Valley woollypod (*Astragalus leucolobus*) RPR 1B.2
- Lancaster milk-vetch (*Astragalus preussii* var*. laxiflorus*) RPR 1B.1
- Peirson's lupine (*Lupinus peirsonii*) RPR 1B.3
- Rock Creek broomrape (*Orobanche valida* ssp. valida) RPR 1B.2
- Red rock poppy (*Eschscholzia minutiflora* ssp. *Twisselmannii*) RPR 1B.2
- San Gabriel linanthus (*Linanthus concinnus*) RPR 1B.2
- Parry's spineflower (*Chorizanthe parryi* var. *parry*) RPR 1B.
- Mojave spineflower (*Chorizanthe* spinosa) RPR 4.2
- Johnston's buckwheat (*Eriogonum microthecum* var. *johnstonii*) RPR 1B.3
- Alkali mariposa lily (*Calochortus striatus*) RPR 1B.2
- Parish's alkali grass (*Puccinellia parishii)* RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Arroyo toad (*Anaxyrus californicus*) FE, SSC
- Desert tortoise (G*opherus* agassizii) FT, ST
- Swainson's hawk (*Buteo swainsoni*) ST
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, ABC, SSC, BCC
- mountain plover (*Charadrius montanus*) FT, CSC
- Willow flycatcher (*Empidonax traillii*) SE
- American peregrine falcon (*Falco peregrinus anatum*) SE

- Bald eagle (*Haliaeetus leucocephalus*) FT
- White faced ibis (*Plegadis chihi*) ST
- Bank swallow (*Riparia riparia*) ST
- Mohave ground squirrel (*Xerospermophilus mohavensis)* ST
- Nelson's antelope squirrel (*Ammospermophilus nelsoni*) ST

In addition, several other state-listed species of special concern have the potential to occur:

- Western pond turtle (*Emys marmorata*) BLMS, SSC, FSS
- Mojave fringed-toed lizard (*Uma scoparia*) BLMS, SSC
- San Diego horned lizard (*Phrynosoma blainvillii*) BLMS, SSC, FSS
- Chuckwalla (*Sauromalus ater)* (unusual in the County)
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, SSC, FSS
- Cooper's hawk (*Accipiter cooperi*) CDFG Watch List
- Sharp-shinned hawk (*Accipiter striatus*)
- Tricolored blackbird (*Agelaius tricolor*) ABC, BLMS, SSC, BCC (nesting colony)
- Southern California (ashy) rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Bell's sage sparrow (*Amphispiza belli belli*) ABC, CDFG Watch List, BCC
- Golden eagle (*Aquila chrysaetos)* CDF, CDFG Fully Protected, CDFG Watch List, BCC
- Short-eared owl (*Asio flammeus*) ABC, SSC
- Long-eared owl (*Asio otus*) SSC
- Burrowing owl (*Athene cunicularia*) BLMS, SSC, BCC
- Redhead (*Aythya americana*) SSC
- California spotted owl (*Strix occidentalis occidentalis*) ABC, BLMS, SSC, FSS, BCC
- Ferruginous hawk (*Buteo regalis*) CDFG Watch List, BCC
- Vaux's swift *(Chaetura vauxi)* SSC
- Black tern (*Chlidonias niger*) SSC

- Northern harrier (*Circus cyaneus*) SSC
- California gull (*Larus californicus*) CDFG Watch List
- Yellow warbler (*Dendroica petechia brewsteri*) SSC, BCC
- California horned lark (*Eremophila alpestris actia*) CDFG Watch List
- Merlin (*Falco columbarius*) CDFG Watch List
- Prairie falcon (*Falco mexicanus*) CDFG Watch List, BCC
- Yellow-breasted chat (*Icteria virens*) SSC
- Least bittern (*Ixobrychus exilis*) SSC, BCC
- Loggerhead shrike (*Lanius ludovicianus)* SSC, BCC
- White-faced ibis (*Plegadis chihi*) CDFG Watch List
- Le Conte's thrasher (*Toxostoma lecontei*) ABC, SSC, BCC
- Gray vireo (*Vireo vicinior*) ABC, BLMS, SSC, BCC
- Yellow-headed blackbird (*Xanthocephalus xanthocephalus*) SSC
- Osprey (*Pandion haliaetus*) CDF, CDFG Watch List
- American white pelican (*Pelecanus erythrorhynchos*) SSC
- Double-crested cormorant (*Phalacrocorax auritus*) CDFG Watch List
- Pallid bat (*Antrozous pallidus*) BLMS, SSC, FSS, WBWG High Priority
- Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*) SSC
- Townsend's big-eared bat (*Corynorhinus (Plecotus) t. townsendii*) BLMS, SSC, FSS, WBWG: High Priority
- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High Priority
- California mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High Priority
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium Priority
- Big free-tailed bat (*Nyctinomops macrotis)* SSC, WBWG High Priority
- Southern grasshopper mouse (*Onychomys torridus ramona*) SSC
- Tehachapi pocket mouse (*Perognathus alticolus inexpectatus*) SSC, FSS

- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE ANTELOPE VALLEY SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	Critical habitat for the only known Antelope Valley population of the federally-endangered arroyo toad is adjacent to Little Rock Reservoir, upstream in Little Rock Creek, and some may still be found downstream of the dam in the SEA. The SEA encompasses much of the County ranges of the federally-threatened California desert tortoise, including much of the County critical habitat for the tortoise. The state-threatened Mohave ground squirrel occurs throughout much of the SEA. The SEA includes some of the critical habitat of mountain yellow-legged frog in the South Fork of Big Rock Creek. It includes habitat designated in the Western Mojave Plan (WEMO) for the alkali mariposa lily, which is a rare lily of the desert floor.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The mesquite bosque, sand sheet, rocky butte, desert riparian woodland, and alluvial fan sage scrub habitats are unique and regionally restricted biotic communities encompassed by the SEA. Desert species not, or rarely, found elsewhere in the County, such as verdin, black-throated sparrow, Mojave rattlesnake, desert banded gecko, Leech's prionid borer, and mesquite borer, occur within these habitats. Additionally, the ponds and other riparian and wetland systems in the northern portion of the SEA support numerous water birds and raptors not found elsewhere in the County.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The desert alluvial fan sage scrub, Joshua tree woodland, desert riparian woodland, mesquite bosque, alkali meadow/marsh, desert freshwater marsh, playa lake and seasonal pool habitats are located within, are unique to, or best represented within, the SEA.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or in the County.	Met	The freshwater habitats within and around Rosamond, Buckhorn and Rogers dry lake basins have large concentrations of migratory and resident waterfowl and birds of prey, providing them with essential seasonal and permanent resources. The rocky desert buttes are unique roosting, sheltering, perching and nesting sites for birds of prey and bats. This SEA is centered on migratory routes for both plants and animals along principal desert washes and buttes that connect the mountains to freshwater playas.
E)	Biotic resources that are of scientific interest because they are either an extreme in	Met	The mesquite bosque that is located within the SEA is clearly at an extreme of its geographical range, along with its associated biota, such as the mesquite borer. Edge populations usually represent an

	Criterion	Status	Justification
	physical/geographical limitations, or represent unusual variation in a population or community.		unusual genetic variation in a population or community, and therefore meet the criterion of scientific interest as well as the criterion of a population at the extreme physical/geographical limit of its range.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The SEA encompasses some of the most biotically intact acreages of Joshua tree woodland, desert riparian woodland, and desert alluvial fan sage scrub remaining in the County. Mesquite was formerly widely distributed in the Antelope Valley, but due to harvesting, is now limited to a few protected areas, such as the Edwards Air Force Base.

In conclusion, the area described is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) populations of scientific interest at the edge of their range including the desert tortoise, the mesquite bosque, and the Mojave ground squirrel; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Cruzan Mesa Vernal Pools SEA

Location

General

The Cruzan Mesa Vernal Pools Significant Ecological Area (SEA) lies north of the Santa Clara River southeast of Bouquet Canyon. The SEA boundaries encompass the watershed and drainages of the Cruzan Mesa and Plum Canyon vernal pools, which are considered as a single ecosystem within the SEA. Vernal pools are a rare habitat. They are floored by clay or other substrates that retain the water of spring rains for a period of months. The pool dries primarily by evaporation. The fauna and flora are adapted to this regimen, which often forms propagules that can last through years of dessication. The pools are ephemeral, and may not fill every year. The fauna may be specific to an area of pools. Most biota is spread from pool to pool in mud, which adheres to the feet of birds and other animals that visit the pools.

The SEA is located within the unincorporated area of the County and lies entirely within the United States Geological Survey (USGS) 7.5' California Mint Canyon Quadrangle.

General Boundary and Resources Description

The SEA boundaries generally follow sub-watershed boundaries and occasionally extend beyond the sub-watershed boundary into areas to encompass vegetation, such as coastal sage scrub. The vernal pools in the northwest segment of the SEA are bounded in part by a sub-watershed boundary, but are primarily based on land formations that would adversely affect the vernal pools if altered to a great degree. This segment encompasses the vernal pool upland areas that contribute to the biological function of the vernal pool ecosystem. This SEA area includes most of the local

federally-designated critical habitat for the threatened vernal pool plant, spreading navarretia (*Navarretia fossalis*, FT).

The SEA includes mesas, canyons and interior slopes, with Plum Canyon Creek running east-west through the southern portion of the SEA. The extent of the SEA encompasses the watershed, which supports both regionally unique vernal pools, including their immediate watersheds and the corridor between them. Plum Canyon forms the major drainage running east-west through the southern portion of the SEA, which drains west toward Bouquet Canyon. Uplands within the SEA are comprised of slopes and canyons, which support coastal sage scrub or scrub-chaparral vegetation. The Cruzan Mesa vernal pool complex lies within an elevated, topographically enclosed basin atop an eroded foothill between Mint and Bouquet canyons. Plum Canyon vernal pool, which is situated in a landslide depression on a hillside terrace, is smaller than the Cruzan Mesa pools, but possesses the same essential vernal pool characteristics as the larger system, and the two areas together form an ecologically functional unit.

The seasonally wet vernal pools and surrounding open coastal sage scrub and chaparral slopes support migrant and resident birds, other native sage scrub vertebrate species, and a number of sensitive taxa, including Riverside fairy shrimp, western spadefoot toad, ashy rufous-crowned sparrow, Bell's sparrow, and possibly coastal California gnatcatcher. The steep cliffs that surround the Cruzan Mesa vernal pools, especially along the southeast and north margins, provide protected sites for perching, roosting and nesting by a variety of birds of prey, including great horned owl, barn owl, red-tailed hawk, prairie falcon, and golden eagle. The Plum Canyon vernal pool is hidden from view from the Plum Canyon roadway, and receives little human attention. Trash dumping, shooting and off-road vehicle activities have occurred within a few meters of the margin of the pool basin, but the pool shows only limited evidence of human intrusion.

Vegetation

The SEA encompasses formations of the following: vernal pool aquatics and emergent species; coastal sage scrub; mainland cherry forest; chaparral; and ruderal non-native grassland. Dirt roads inside the SEA are bordered by non-native grassland and other ruderal plant species. The vernal pool margins support limited densities of native grasses, but these do not form separate communities and are included within the vernal pool floral matrix. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Vernal Pool Sites: Occur in several different areas within the SEA where unique sub-surface conditions of shallow layers of less permeable horizons allow for seasonal accumulations of freshwater. True vernal pools, which are rare in Southern California and extremely rare in the County, form seasonally in shallow, closed basins, usually where a lens of heavy clay soil holds surface water following rainfall events. Agency-listed sensitive plant species occurring within both of the SEA pool systems include California Orcutt grass and spreading navarretia, along with other vernal pool endemics such as hairgrass, woolly-marbles, waterwort, *Mimulus latidens*, and water-starwort.

Corresponding MCV communities:

- *Alopecurus geniculatus* (water foxtail meadows) Provisional Herbaceous Alliance
- *Eleocharis macrostachya* (pale spike rush marshes) Herbaceous Alliance

- *Juncus arcticus (var. balticus, mexicanus* [*Juncus balticus* ssp. *ater, Juncus mexicanus*]) (Baltic and Mexican rush marshes) Herbaceous Alliance

- *Juncus (oxymeris, xiphioides)* (iris-leaf rush seeps) Provisional Herbaceous Alliance

Coastal Sage Scrub: Occurs throughout the slopes and ridges of most of the SEA, in places intermixed with chaparral elements. To some extent, the mosaic of coastal sage and chaparral reflects the fire history of any given portion of the site, with scrub formations generally occurring on sites that have recently burned. However, some slopes within upper Plum and Mint canyons, where no fires have occurred for over 30 years, still support "pure" coastal sage scrub, which suggests that the formation is a climax community on those sites.

Dominant species on most slopes within the SEA are California sagebrush, woolly blue-curls, chaparral yucca, black sage, Acton encelia, white sage, and chamise. A variety of less dominant associated species is also present, including lance-leaved live-forever, common tarplant, California buckwheat, beavertail cactus, turkish rugging, and Peirson's morning-glory. Disced or cleared areas have regrown with a dense cover of oats and bromes, California poppy, fiddleneck, several species of lupines, popcorn flower, comb-bur and other disturbance-favored native annuals. Less frequently disturbed portions of the upper watershed basin support dense stands of chamise. California scrub oak chaparral with yerba santa is abundant along dirt roads and other disturbed areas. Where ground-water levels permit, giant rye grass, Mexican elderberry, acourtia, redberry, toyon, holly-leaved cherry, Fremont cottonwood, western sycamore, and arroyo willow occur in the lower portions of canyons and along Plum Canyon Creek.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance

- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance

- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance

- *Isocoma menziesii* (Menzie's golden bush scrub) Shrubland Alliance

- *Salvia apiana* (white sage scrub) Shrubland Alliance

- *Salvia mellifera* (black sage scrub) Shrubland Alliance

- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance

- *Ericameria linearifolia* (narrowleaf goldenbush scrub) Provisional Shrubland Alliance

- *Lotus scoparius* ([*Acmispon glaber*] deer weed scrub) Shrubland Alliance

- *Lupinus albifrons* (silver bush lupine scrub) Shrubland Alliance

- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Non-Native Grassland: Generally consists of invasive annual grasses, which are primarily of Mediterranean origin. It has become the dominant ground cover on disturbed sites throughout the western U.S. Common species within this "community," which is a ruderal formation and not a true habitat or community, include oats, bromes, foxtail chess, and other grasses, along with wild mustards, yellow star thistle, wire lettuce, sow thistle, milk thistle, and other disturbance-favored "weedy" taxa. Non-native ruderal formations occur over most of the Cruzan Mesa around the vernal pools, where coastal sage scrub has been disturbed or removed, in small strips and patches through the SEA—primarily along disturbed dirt road edges and where grading or other substrate disturbances have not regrown to native species.

Corresponding MCV communities:

- *Avena (barbata, fatua)* (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica (nigra) and other mustards* (upland mustards) Semi-Natural Herbaceous Stands
- *Bromus (diandrus, hordeaceus)-Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus (arabicus, barbatus)* ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Centaurea (solstitialis, melitensis)* (yellow star-thistle fields) Semi-Natural Herbaceous Stands
- *Lolium perenne* ([*Festuca perennis*] perennial rye grass fields) Semi-Natural Herbaceous Stands

Mainland Cherry Forest: Is typically composed of tall stands of holly leaf cherry on rocky, dry slopes. Within the SEA, this community is not well-developed and intermingles with chaparral. It can be found in a single narrow patch on a slope in the southwestern portion of the SEA.

Corresponding MCV communities:

- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Prunus virginiana* (choke cherry thickets) Provisional Shrubland Alliance

Wildlife

Wildlife diversity and abundance within the SEA are moderate, and commensurate with the relative homogeneity of the natural open space habitat types. Wildlife within much of the SEA is comprised of species that typically occur within coastal sage scrub. Birds of prey frequently forage over the pools and open grasslands, which form following the seasonal drying of the surface water. The Cruzan Mesa and Plum Canyon vernal pools provide rare surface water habitat for wildlife in an otherwise semi-arid scrub region, and the ponds attract moderate numbers and diversity of migratory waterfowl. The peripheral areas of coastal sage scrub around the vernal pools provide important shelter, terrestrial refugia, ecotonal and edge habitat for wildlife. A number of local wildlife species are more-or-less dependent upon coastal sage scrub or scrub-chaparral formations, while other species are strictly limited to seasonal pool habitats. The two vernal pool systems in the SEA, along

with the coastal sage scrub-chaparral uplands surrounding and connecting them, constitute a single, integrated functional ecosystem for wildlife species within the SEA boundaries, as well as a part of the larger regional scrub-chaparral ecosystem.

While the analysis of invertebrates on any particular site is usually limited by a lack of specific data, containing only two primary natural habitat types within the SEA ensures that there is sufficient acreage to support healthy populations of present invertebrate species, which could be several hundred terrestrial species. The vernal pools, when ponded, form aquatic habitats for a moderately diverse fauna of freshwater arthropods and other invertebrates, including native fairy shrimp, aquatic flies, diving beetles, water scavengers, ostracods, and snails. At present, one ground beetle species (insect order *Coleoptera*), which is endemic to vernal pools, is known from the SEA.

Generally, amphibians are relatively common in coastal sage scrub habitats, with persistent surface hydrology during the breeding season. The SEA supports abundant populations of Pacific chorus frog, western toad, and western spadefoot toad. At least two species of salamander may also be present within more mesic portions of the surrounding canyons and chaparral.

Reptile populations expected to be within the SEA include numerous lizard species, including San Diego banded gecko, yucca night lizard, side-blotched lizard, western fence lizard, western skink, San Diego alligator lizard, coastal western whiptail, coastal horned lizard, and silvery legless lizard. A robust snake fauna is also expected to be within the SEA, including western blind snake, coachwhip ("red racer"), chaparral whipsnake, coastal patch-nosed snake, California rosy boa, San Diego gopher snake, California kingsnake, California mountain kingsnake, night snake, and Southern Pacific rattlesnake.

Bird diversity within the SEA is related to habitat opportunities for year-round residents, seasonal residents, migrating raptors and song birds. Open coastal sage scrub hosts a suite of birds that are typical of such sites, at lower elevations over most of the coastal slopes of Southern California. The most productive sites for resident coastal sage scrub and chaparral birds are around riparian and freshwater systems, which also attract large numbers of migrants during spring and fall. The vernal pools attract moderate numbers of migrating waders and waterfowl, and provide important winter foraging areas for resident and migratory birds of prey. Coastal sage and chaparral birds—resident or breeding within the SEA—include ashy rufous-crowned sparrow, Bell's sage sparrow, black-chinned sparrow, lark sparrow, California thrasher, spotted towhee, California towhee, phainopepla, northern mockingbird, lazuli bunting, and several species of hummingbird. In addition, species (western meadowlark, California horned lark, and perhaps also savannah and grasshopper sparrows) nest and forage in the grassland and ruderal habitats surrounding the vernal pools. Birds of prey that have been observed around the vernal pools include red-tailed hawk, northern harrier, prairie falcon, and golden eagle. Barn owl, great horned owl, and common raven nest in the cliffs surrounding Cruzan Mesa.

Wildlife species previously recorded, as well as those expected to occur, within the study area are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The vernal pools situated within this SEA serve as isolated, high-quality, habitat linkage sites for migratory waterfowl. The vernal pools teem with arthropod and amphibian activity, and provide essential feeding grounds for long-distance migrants, as well as for resident species of reptiles, birds

and mammals. The ponds do not lie within any identified terrestrial movement routes for wildlife, but may serve as important seasonal watering sites for species moving through and across the Plum Canyon divide between Mint and Bouquet canyons. The Plum Canyon stream channel undoubtedly serves as a movement pathway for more mobile species of terrestrial mammals, but it no longer links any larger habitat areas directly due to land conversion in Mint and Bouquet canyons.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population size, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

The SEA is configured to encompass the regionally significant vernal pools and coastal sage scrub watershed, which supports them. Sensitive Holland plant communities within the SEA include vernal marsh, fresh-water swamp, coastal sage chaparral shrub; and in Plum Canyon, mainland cherry forest. We list here all Holland plant communities with the alliances in the new classification system. The related alliances, even if not sensitive, may be critical to support the sensitive ones.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The SEA is configured to encompass regionally significant communities, which include mainland cherry forest in Plum Canyon, vernal marsh, and fresh-water swamp. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to the conservation and maintenance of the species. The spreading navarretia has critical habitat areas that are coincident with the SEA.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- California Orcutt grass (*Orcuttia californica*) FE, SE, RPR 1B.1
- Spreading navarretia (*Navarretia fossalis)* FT, RPR 1B.1
- Slender-horned spineflower *(Dodecahema leptoceras)* FE, SE, RPR 1B.1
- Parry's spineflower (*Chorizanthe parryi* var*. parryi)* RPR 1B.1

- Orcutt's broadiaea (*Brodiaea orcuttii*) RPR 1B.1
- Slender mariposa lily (*Calochortus clavatus* var*. gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae)* RPR 1B.2

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Vernal pool fairy shrimp (*Branchinecta lynchi*) FT
- San Diego fairy shrimp (*Branchinecta sandiegonensis*) FE
- Riverside fairy shrimp (*Streptocephalus wootonii*) FE
- Swainson's hawk (*Buteo swainsoni*) ST, ABC, FSS, BCC
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, FSS, BCC
- American peregrine falcon (*Falco peregrinus anatum*) FD, SD CDF, CDFG Fully Protected, BCC
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, ABC, SSC

In addition, there are animals recognized as state-listed species of concern that have the potential to occur:

- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Coastal horned lizard (*Phrynosoma blainvillii*) BLMS, SSC, FSS
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Southern California (ashy) rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, SSC, FSS
- Bell's sage sparrow (*Amphispiza belli belli*) ABC, CDFG Watch List, BCC
- Golden eagle (*Aquila chrysaetos)* CDF, CDFG Fully Protected, CDFG Watch List, BCC
- Burrowing owl (*Athene cunicularia*) BLMS, SSC, BCC
- Northern harrier (*Circus cyaneus*) SSC
- Prairie falcon (*Falco mexicanus*) CDFG Watch List, BCC
- Loggerhead shrike (*Lanius ludovicianus*) SSC, BCC

- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Southern grasshopper mouse (*Onychomys torridus ramona*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE CRUZAN MESA VERNAL POOLS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The only known County populations of the federally- endangered Riverside fairy shrimp, and the state and federally-endangered California Orcutt grass, are found in the vernal pools within the SEA. The federally-threatened plant, spreading navarretia, also occurs in these pools, and the pools and much of the SEA are designated critical habitat for this plant.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The Cruzan Mesa and Plum Canyon vernal pools are regionally unique biotic communities with several plants found only in such habitat types. The pools support the Riverside fairy shrimp, western spadefoot toad, and at least one vernal pool endemic ground beetle.
C)	Within County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The Cruzan Mesa and Plum Canyon vernal pools are unique biotic communities within the County, with several plants only found in such habitat types. The pools support the Riverside fairy shrimp, western spadefoot toad, and at least one vernal pool endemic ground beetle species.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The vernal pools serve as concentrated breeding areas for several species of amphibians, including the sensitive western spadefoot toad. They also attract a diversity of waterfowl seasonally—chiefly species migrating through the area—which use the pools for resting and feeding. While other open water systems attract and support waterfowl, the vernal pools are located in remote, upland sites, away from other freshwater features.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a	Not met	Although the SEA does not contain biotic resources that are clearly an extreme in physical/geographical limitations, or represent unusual variation in a population or community (and therefore does not meet this criterion), it is of scientific interest due the extreme rarity of vernal pool communities, especially in the County.

	Criterion	Status	Justification
	population or community.		
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Protection and sensitive management of the Cruzan Mesa and Plum Canyon vernal pools would preserve one of the few examples of such habitat type in the County.

The SEA meets several designation criteria and supports several regional biological values. These values include: A) sensitive plant species unique to seasonal pools on heavy clay soils—several of which are at the northernmost point in their overall ranges, and seasonal surface water, which provide breeding sites for sensitive amphibians, including western spadefoot and Riverside fairy shrimp; B-C) a concentration of vernal pools, found in few places in the County and rare in the region, and their coastal sage scrub watershed, which serves as a hydrological filter, and seasonal ponds and surrounding mesic vegetation; D) vegetation that provides essential foraging and wintering sites for migrating birds that are otherwise uncommon on the coastal side of the San Gabriel Mountains, and steep cliffs surrounding the mesa tops with crevices and cavities providing roosting and nesting sites in the otherwise brush-covered hillsides; E-F) Rare habitat in Southern California, and the support of sensitive resources that are unique locally and regionally, and that biologists consider to be among the most sensitive habitat types in Southern California.

East San Gabriel Valley SEA

Location

General

The East San Gabriel Valley SEA is located in the eastern end of the San Gabriel Valley. The SEA includes some of the low hills that rim the San Gabriel Valley on the east. The SEA has several natural, interacting components that constitute an area-wide ecological unit. The SEA consists of five units. The location and configuration of this SEA and its parts are primarily defined by the urbanization of the eastern San Gabriel Valley, which has occurred over the more developable valley floor and lower slopes of the San Jose Hills. As a consequence, the SEA resembles an "archipelago" that encompasses portions, or islands, of undeveloped ridgelines, hilltops and drainages between the San Gabriel Mountains to the north and the Puente Hills to the south.

Generally, the topography within this SEA consists of moderate to steep hillsides with north, south, east and west slope aspects. Ridgelines vary in width, from narrow to broad, with well-defined drainages in between. One major drainage, Walnut Creek, and a man-made reservoir, Puddingstone Reservoir, are found within this SEA. Elevations range from a low of approximately 560 feet above Mean Sea Level (MSL) in the Walnut Creek drainage, to a high of approximately 1,375 feet above MSL at Buzzard Peak.

The SEA has several ridgelines and hilltops and the major drainage of Walnut Creek at the northern side of the San Jose Hills. In the last half of the 20th century, these areas have been surrounded by urban development. Units 1-5 include: 1) South Hills Park and the surrounding undeveloped land in the City of Glendora north of Interstate-210; 2) The natural riparian section of Walnut Creek County

Park. The SEA includes sections in the City of Covina and City of San Dimas; 3) Frank G. Bonelli Regional County Park (Bonelli Park); 4) Buzzard Peak, which is an extended ridge of undeveloped slopes to the west of Bonelli Park within the City of San Dimas, City of Walnut, and City of West Covina; and 5) Elephant Hill and an adjoining ridgeline in the City of Pomona. Along most of its boundaries, the SEA is bordered by developed properties. Large parts of this SEA are designated critical habitat for the federally-threatened coastal California gnatcatcher (*Polioptila californica californica*).

In its entirety, the SEA is located within the San Dimas, Glendora and Baldwin Park U.S. Geological Survey (USGS) 7.5' California Quadrangles.

General Boundary and Resources Description

Unit 1: The northernmost section of the SEA is the South Hills unit. Much of the SEA is “protected” in the South Hills Park of the City of Glendora. The SEA lies north of the Interstate-210, has its northwestern boundary along Big Dalton Wash (a concrete-lined flood control channel), and northeastern boundary along existing residential development in the floodplain of the wash and adjoining hills. The eastern boundary is also bordered by existing residential development. The southern boundary consists of the Interstate-210 right-of-way, and the western boundary lies along Glendora Avenue. Residential neighborhoods on the periphery (and not inside) of the South Hills Park are excluded, while external natural habitat is included in the SEA. An area of nursery fields in a central position of the park is included, as it is less than 40 acres in extent. Toward the eastern side of the SEA, there are some estate residences on the hills that are included, as they incorporate much natural habitat; however, denser neighborhoods are excluded from the SEA.

The South Hills are an area of chaparral and grasslands, and a northern stepping stone for wildlife (chiefly aerial) that move along the spine of the San Jose Hills between the San Gabriel Mountains of the Transverse Ranges, and the Puente and Chino Hills of the Peninsular Ranges on the southern side of the San Gabriel Valley. In South Hills Park, there are fine stands of walnut woodland in the upper elevations; northern ravines of oak woodland with walnut woodland in the upper elevations; what remains of the coast live oak woodland that once bordered the Big Dalton Wash; and excellent stands of prickly pear cactus covering some of the slopes. There are also grasslands with a dominant component of introduced mustards and some rocky exposures. Coastal sage scrub with alternating dominant components of California sagebrush (*Artemisia californica*), sumacs (*Rhus* spp.) and elderberries (*Sambucus* spp.) cover many of the slopes. Big Dalton Wash is channelized, and much development has been inserted into what was formerly Big Dalton’s riparian oak woodland. This residential area forms a border for the northeast area of the SEA.

Unit 2: The westernmost portion of Walnut Creek begins where South Reeder Avenue crosses the Walnut Creek drainage on the border of the City of Covina and City of San Dimas. Walnut Creek runs along the northern base of the San Jose Hills and is a riparian interface between the rolling hill habitat and the coastal plain of the San Gabriel Valley. This segment encompasses the undeveloped creek bottom and flood plain, which is a relatively natural area along and adjacent to Walnut Creek, most of it preserved as Walnut Creek Park. The Creek and lower slopes of the San Jose Hills contain one of the best riparian oak woodlands in the County, with a mixture of ash, walnut, willows, and sycamores. The upper areas of the oak woodland transition into excellent examples of walnut woodlands. Traveling east from this point, the SEA is bordered to the north by residential areas on the plains and to the south by residential areas on the ridgelines above the Creek. Much of the habitat of interest is on the slope of the ridgeline above the Creek.

Unit 3: The Walnut Creek Park unit is connected to the Bonelli Park unit. The SEA continues east to the Interstate-210, where the drainage and the SEA underpass along with San Dimas Avenue. There is a fenced footpath on the south side of the underpass that wildlife and humans use extensively. On the east side of the Interstate-210, the boundaries diverge and follow the freeway right-of-way to the north and to the south. At the edge of natural habitat about a 0.2 mile north, the boundary turns northeast with Walnut Creek. There are two fingers of creek tributaries: one encircles its stream course as far as the Arrow Highway, and the other includes the undeveloped north-facing slope of a low ridge that has residential development along the top. The SEA ends at a Union Pacific rail line. The edges of Walnut Creek have business parks and industrial properties, as well as residential areas.

The SEA boundary returns back west from the two fingers to circle around the west side, and excludes the Raging Waters theme park. From Raging Waters, the SEA boundary follows along the northern boundary of Bonelli Park, which is the largest unit of the SEA. This area of Bonelli Park includes the 250-acre Puddingstone Reservoir, which is a flood control basin created by damming the main course of Walnut Creek. Puddingstone Reservoir is home to many resident birds, including a large population of American coots (*Fulica americana*). Notably, Puddingstone Reservoir also hosts a great variety and number of migrating waterfowl and other birds during the spring and fall, and provides riparian habitat for birds and other animals that are riparian obligates. Following along Puddingstone Drive to the Puddingstone Channel, the SEA eastern boundary turns south to conform to the eastern boundary of Bonelli Park. Within Bonelli Park, developed areas include the Mountain Meadows Golf Course on the west side of the Park, the campground area for recreational vehicles, the northern parking area of Puddingstone Reservoir, and the developed south side of Puddingstone Reservoir. On the south side of the park, the boundary borders the Interstate-10 to the junction with State Route-57, and then turns north following the east side of State Route-57, back to the undercrossing of San Dimas Avenue.

Bonelli Park (with the exception of the built areas above), Puddingstone Reservoir, and Raging Waters are critical habitat for the coastal California gnatcatcher. There are a number of breeding pairs that occur in natural areas of coastal sage scrub in Bonelli Park. Another species of note is the many-stemmed dudleya or live-forever (*Dudleya multicaulis*), which is an uncommon plant found on the picturesque rocky outcrops of the Glendora volcanics formation. This plant is at its northernmost extent in this area of the San Gabriel Valley, and is more common in Orange County.

Unit 4: Across the State Route-57 from Bonelli Park, the San Jose Hills continue southwest, with residential areas dispersed among intervening grassland and chaparral natural areas. This area is considered an extension of the Buzzard Peak ridgeline. The natural area that continues the habitat in Bonelli Park is roughly a central area of a north-facing wooded area and a southern area of a ridgeline with steep slopes along the Interstate-10. The SEA is chiefly on the undeveloped upper ridge areas, and critical habitat for the coastal California gnatcatcher closely follows the SEA in the southern part along the ridgeline and the Interstate-10. The SEA and critical habitat for the gnatcatcher cross the highway with the ridgeline, and extend to Buzzard Peak

Buzzard Peak and its associated lands begin in the east along a ridgeline that is immediately north of the California State Polytechnic University (Cal Poly), Pomona campus. The western section of the SEA is undeveloped, but may in the path of future growth. This component follows the ridgeline west to where it crosses Grand Avenue and continues in a westerly direction, which encompasses a series of minor ridgelines and drainages with highly dispersed residential areas. Moving east to west, its northern boundary is marked by Interstate-10, developed portions of the Forest Lawn Memorial Park Covina Hills and residential areas. Moving from east to west, its southern boundary is

marked by developed and cultivated areas of the Cal Poly campus, Amar Road and residential areas. Along their entire lengths, the northern and southern boundaries follow highly circuitous alignments at the edge of developed landscape. A lobe of the SEA extends into the natural area that separates Cal Poly Pomona from Mt. San Antonio College. Gnatcatcher critical habitat covers most of this segment of the SEA, and extends beyond Grand Avenue as far as State Route-39 (Azusa Avenue), with some islands of critical habitat in nearby hilltops.

Unit 5: A final component of this SEA is located south of the intersection of State Route-71 and State Route-57 in the City of Pomona, at a ridgeline that is bordered chiefly by development that has an undisturbed remnant of the original habitat: north-facing slopes of oak and walnut woodland. South-facing slopes consist of a mixture of dispersed chaparral, coastal sage scrub, and grasslands. There is a lobe that is north of Mission Boulevard in the City of Pomona on Elephant Hill, and a lobe south of Mission Boulevard. On Elephant Hill, the northern boundary is the Metrolink track. The eastern boundary is bordered by industrial development; the southern boundary is Mission Boulevard in the southeast; and the periphery of apartments along Brea Canyon Road, Appian Way, and Ferrara Court in the southwest. The western boundary is State Route-57. The Spadra cemetery with many introduced eucalyptus trees is not included. The ravines of Elephant Hill have fine examples of walnut woodland and the upper slopes have grassland, often dominated by mustards, with some areas of prickly-pear scrub.

Southeast of Mission Boulevard, the SEA is bordered by Mission Boulevard. The north-facing slopes with excellent oak and walnut woodland are bordered by residential areas at the base of the steep slopes. The eastern end is bordered by North Ranch Road, and the southwest is bordered by the dense residential community of Phillips Ranch in the City of Pomona. The crest of the ridge is rolling grasslands that are dominated by introduced mustards, and the slopes have a mix of dispersed grasslands, chaparral, coastal sage scrub, and prickly pear scrub.

The SEA encompasses several different local jurisdictions, including the unincorporated area of the County, City of Covina, City of Glendora, City of La Verne, City of Pomona, City of San Dimas, City of Walnut, and City of West Covina.

Vegetation

The variety of topography, soil types, slope aspects and water availability within this SEA create a range of physical habitats that support numerous plant species. The biological communities found in this SEA vary according to physical habitat conditions (i.e., slope exposure, soil type and depth, and the availability of water) and the area's history of grazing practices. Elevation plays almost no role in defining habitat types. Many slopes support oak and walnut woodland, which often intergrade with prevalent stands of mixed chaparral. Coastal sage scrub is also found on slopes with shallower, drier soils. Drainages are typically vegetated with oak riparian woodlands and forests, with stands of western sycamore (*Platanus racemosa*) and willow woodland. More moderate slopes and broader ridgelines have been subjected to livestock grazing. In these areas, the dominant vegetation consists of open non-native grassland. Oftentimes, grassland exists as the understory ground cover for wooded areas, which creates oak and walnut savannahs. Small isolated areas of freshwater marsh are also found around Puddingstone Reservoir. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Brief descriptions and general locations of each plant community present within the SEA are

provided below, including oak woodland, oak riparian forest, walnut woodland, willow woodland, chaparral, coastal sage scrub, freshwater marsh, and non-native grassland.

Oak Woodland: A plant community dominated by species of the oak genus (*Quercus*). Within this SEA the dominant species is the coast live oak (*Quercus agrifolia* var. *agrifolia*), which typically grows to heights of 20 to 40 feet and forms either closed or open canopies. Understory vegetation varies from grassland in areas that are subject to grazing, to shrubs where the topography is steeper and/or grazing has been relaxed. This vegetation may also intergrade with shrub communities. Within this SEA, oak woodland is scattered throughout all components where it is most prevalent on northfacing slopes and in drainage bottoms.

Oak Riparian Forest: A highly related community to the oak woodland found in the SEA. It is also dominated by coast live oak. The primary difference between oak woodland and oak riparian forest is the greater availability of water in riparian situations, which is expressed in a dense tree canopy cover and tree clusters. A greater number of hydrophytic (moister favoring) plant species are also found in the understory. Typical riparian trees, such as western sycamore and willows (*Salix* spp.), occasionally occur. Oak riparian forest is well developed within Walnut Creek. Riparian trees are also scattered in other drainages throughout the Buzzard Peak component of this SEA.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Quercus engelmannii* (Engelmann oak woodland) Woodland Alliance

Walnut Woodland: Often intergrading with oak dominated woodlands or developed as a distinct community. This community is dominated by the Southern California black walnut (*Juglans californica*), which grows 10 to 30 feet high. More often than not, the Southern California black walnut grows in open stands; however, closed tree canopies are not uncommon. In similar fashion to oak woodlands, its understory varies from grasses to shrubs. Thus, it forms stands ranging from savannahs to forests throughout the SEA. It is most common within Bonelli Park and Walnut Creek Park, South Hills, and Buzzard Peak components of the SEA.

Corresponding MCV communities:

- *Juglans californica* (Southern California black walnut groves) Woodland Alliance

Southern Willow Scrub: A well-developed southern willow scrub community that is found along Live Oak Creek upstream and at the point where the Creek flows into Puddingstone Reservoir in the Bonelli Park and Walnut Creek Park component of the SEA. Smaller patches of this community are also found scattered along drainages in the Buzzard Peak component. This community is dominated by species of willow, which form nearly monotypic stands due to their dense growth. These stands generally reach 10 to 20 feet in height with little understory vegetation.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Mixed Chaparral: A shrub community composed of robust species. Within the SEA, these species

include laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), lemonadeberry (*Rhus integrifolia*) and western blue-elderberry (*Sambucus nigra* var. *caerulea*). Along with other shrub species, chaparral forms dense vegetation covers that grow 5 to 10 feet in height. The development of chaparral is most pronounced within the South Hills, Bonelli Park and Walnut Creek Park, and Buzzard Peak components of the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Ceanothus leucodermis* (chaparral whitethorn) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubalnd Alliance

Coastal Sage Scrub: Communities of coastal sage scrub exhibit less robust structure within this SEA. This plant community is dominated by California sagebrush (*Artemisia tridentata*), California brittle bush (*Encelia californica*), black sage (*Salvia mellifera*), and California buckwheat (*Eriogonum fasciculatum*). Coastal sage scrub also forms dense stands, which grow three to four feet in height. Within this SEA, it is generally found in scattered patches, which are highly integrated with mixed chaparral. These communities are primarily located in the South Hills, Bonelli Park and Walnut Creek Park, Via Verde, and Buzzard Peak components of the SEA.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Opuntia littoralis* (coast prickly pear scrub) Shrubland Alliance

Non-Native Grassland: Consists of non-native annual grasses and forbs. These opportunistically growing species include brome grasses, wild oats and mustards. Characteristic of other parts of Southern California, this community became established as a result of livestock grazing. In the process, native vegetation is removed, sometimes by mechanical means, and replaced by more opportunistic species. Non-native grassland is found throughout the SEA.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) Semi-Natural Herbaceous Stands
- *Centaurea* (*solstitialis*, *melitensis*) (yellow star-thistle fields) Semi-Natural Herbaceous Stands
- *Lolium perenne* (perennial rye grass fields) Semi-Natural Herbaceous Stands

Freshwater Marsh: Small areas that support freshwater marsh and found at scattered locations along the shoreline Puddingstone Reservoir. This community may also exist at other locations, in or adjacent to artificially created impoundments used to water livestock. Freshwater marsh requires perennially shallow water or saturated soils. Dominant plants are comprised of emergent species, including cattails and bulrushes.

Corresponding MCV communities:

- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha* (*angustifolia*, *domingensis*, *latifolia*) (cattail marshes) Herbaceous Alliance
- *Lemna* (*minor*) and relatives (duckweed blooms) Provisional Herbaceous Alliance

Wildlife

Wildlife populations within the SEA are generally expected to reflect lower diversity and abundance of habitat types. This is due to the influences of surrounding development and location of recreational uses over relatively large areas of the SEA. Analysis of invertebrates on any given site is generally limited by a lack of specific data; however, the SEA is considered sufficient to encompass moderately healthy populations of common invertebrate species. Fair numbers of amphibians are expected to be present primarily due to the aquatic and semi-aquatic habitats provided by Puddingstone Reservoir, and riparian habitats along Live Oak Channel and Walnut Creek. Diversity and evenness among these populations, however, is likely to be degraded due to a history of urbanization, which results in only a few species that are able to adapt accordingly.

Similar effects are anticipated for reptiles. Reptilian species that are typically found in suburban and rural areas are expected to occur in relatively high numbers. Less common, and perhaps, locally extinct would be those species that are more secretive in their habitats and/or not as prolific.

A surprisingly high diversity of birds is documented within this SEA, including a large population of coastal California gnatcatcher (*Polioptila californica californica*), which is a federally-threatened species. For numerous upland, raptorial, and water associated birds, the SEA provides a mosaic of habitats. Between woodland, shrubland, grassland and wetlands, diverse populations of birds are able to meet nesting, foraging, and migratory requirements.

Mammal populations also reflect the urbanized areas imparting this SEA. Small mammals are

expected to be uneven in their diversity, with more adaptive, introduced European species in greater numbers compared to other species. Medium-sized mammal populations are expected to exhibit the same characteristics. Large mammals are largely absent on a resident basis.

All wildlife species previously recorded, as well as those expected to occur within this SEA are tabulated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The SEA represents the only regional wildlife linkage between the San Gabriel Mountains and the Puente Hills and Chino Hills complex. Unlike the commonly held concept of a corridor, however, this SEA contains a series of discontinuous habitat blocks and patches, rather than an unbroken corridor for movement. This SEA facilitates movement and exchange between larger habitat areas by permitting terrestrial "island-hopping" between the SEA components.

Using birds as an example, movement may be initiated by an individual or group of birds in either the San Gabriel Mountains or the Puente Hills. Larger species, with the capacity to cover long distances, may make the passage as one segment of its journey. Smaller species, however, that lack the physical or behavioral capacity may not be able to attain this movement under normal circumstances. By utilizing various components of the SEA, the same species can cover this journey in several smaller trips. The same example may also apply to winged insects and wind-borne plant propagules and pollen. Interaction between, not just through the components, can occur as well.

This same function probably does not apply to other taxonomic groups. It is highly doubtful that amphibian, reptile and most mammal populations use this corridor as effectively as birds, if at all. Mule deer (*Odocoileus hemionus*), for example, do not occur within Bonelli Park, but are common in the San Gabriel Mountains and the Puente Hills. However, some mammals that tolerate urban environments, such as Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and striped skunk (*Mephitis mephitis*), use the corridor in the manner previously described. Even mountain lion (*Puma concolor*) periodically enter Bonelli Park and Walnut Creek Park from the outside, by way of routes related to SEA components.

The manner in which the SEA allows wildlife populations in different areas to interact is less than ideal. However, exchange in the manner described above is dictated by the widespread urbanization of the region. “Island hopping” is the only remaining connection for regional interaction that can contribute to the maintenance of genetic variability and health of regional wildlife populations.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species’ declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific “critical habitat areas.” Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the

species. In this SEA, extensive areas are critical habitat for the coastal California gnatcatcher.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. Vegetation communities include Engelmann oak woodland, Southern California black walnut groves, holly leaf cherry chaparral, and California brittle bush scrub, which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*) RPR 1B.1
- Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*) RPR 2.2
- San Gabriel Mountains dudleya (*Dudleya densiflora*) RPR 1B.1
- Many-stemmed dudleya (*Dudleya multicaulis*) RPR 1B.2
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) RPR 1B.2
- Brand's star phacelia (*Phacelia stellaris*) FC, RPR 1B.1
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2

- Parish's gooseberry (*Ribes divaricatum* var. *parishii*) RPR 1A
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2
- Thread-leaved brodiaea (*Brodiaea filifolia*) FT, SE, RPR 1B.1
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) RPR 1B.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- California satintail (*Imperata brevifolia*) RPR 2.1
- California Orcutt grass (*Orcuttia californica*) FE, SE, RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA, based on habitat requirements and known range attributes:

- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- San Bernardino mountain kingsnake (*Lampropeltis zonata parvirubra*) FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Cooper's hawk (*Accipiter cooperii*) CDFG Watch List
- Tricolored blackbird (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Grasshopper sparrow (*Ammodramus savannarum*) CDFG Special Animals List
- Long-eared owl (*Asio otus*) SSC, LAA

- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) BCC, FSS, SSC
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, BCC, FSS, SE
- Black swift (*Cypseloides niger*) BCC, SSC, USBC, AWL, ABC
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- Yellow-breasted chat (*Icteria virens*) SSC
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Bank swallow (*Riparia riparia*) ST
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) SSC
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Western yellow bat (*Lasiurus xanthinus*) WBWG High
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- Fringed myotis (*Myotis thysanodes*) BLMS, WBWG High
- Long-legged myotis (*Myotis volans*) BLMS, SSC, WBWG Medium
- Yuma myotis (*Myotis yumaensis*) BLMS, WBWG Low-Medium
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE EAST SAN GABRIEL VALLEY SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	This SEA contains various alliances of coastal sage scrub that are found in scattered patches over hillside habitat, which support a core population of the federally-threatened coastal California gnatcatcher. The gnatcatcher population has been slowly increasing, as recently observed in coastal sage scrub at two locations in the area, Bonelli Park and Buzzard Peak. There are an estimated 10 and 15 pairs of gnatcatchers in this population. The SEA also has a population of breeding coastal cactus wren. The rare multi-stemmed dudleya has its northernmost population in Bonelli Park.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Several plant communities within this SEA are CDFG highest priority communities due to their restricted distribution in the Southern California region. These communities include walnut woodlands, which are scattered throughout the SEA; oak riparian woodland, which is excellent within the Walnut Creek drainage; isolated stands of willow woodland along many of the drainages; freshwater marsh and open water in association with Puddingstone Reservoir; and coastal sage scrub in scattered patches over hillsides. Coastal sage scrub serves as the habitat for the coastal California gnatcatcher, which has been slowly increasing in Bonelli Park and Buzzard Peak. These areas also have a population of breeding cactus wren. The rare multi-stemmed dudleya has its northernmost population in Bonelli Park.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	All of the plant communities and habitats indicated as restricted in distribution on a regional basis, are also restricted in distribution within the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	Any relatively large body of water with pockets of natural lakeside vegetation along its shoreline potentially meets this criterion, particularly within the context of an arid to semi-arid environment that is characteristic of the County. Although subjected to boating activities and shoreline recreational use, Puddingstone Reservoir serves as an important habitat for migrating water fowl and water birds, which is evident in the high diversity of birds recorded at the Bonelli Park over the past several years. The natural areas of the east San Gabriel Valley serve as a migration and habitat connection between the San Gabriel Mountains and the Puente Hills.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	Bonelli Park contains a population of the rare many-stemmed dudleya, which is at the northern limit of its range. Most of the species is found in the Peninsular Ranges in Orange County. The coastal California gnatcatchers are in the northern extent of their range here, are clearly at an extreme in physical/geographical limitations, and may represent unusual variation in a

			population or community. The SEA, therefore, meets this criterion.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Not Met	The SEA does not contain areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; and E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.

Griffith Park SEA

Location

General

The Griffith Park Significant Ecological Area (SEA) is located within Griffith Park, the central park of the City of Los Angeles, situated on the extreme eastern end of the Santa Monica Mountains. The SEA is an extensive, relatively undisturbed island of natural vegetation in an urbanized, metropolitan area. It supports the coastal sage scrub, chaparral, riparian, and southern oak woodland plant communities that are typical in the interior mountain ranges of Southern California. What makes the SEA important is its geographical location. It has become an island of natural vegetation surrounded by urban and suburban development. The geographic location makes the area important for scientific study, for genetic interchange between otherwise isolated populations, and for recreation of urban residents.

The SEA is located partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Burbank and Hollywood.

General Boundary and Resources Description

The SEA encompasses most of Griffith Park, south of the State Route-134, and west of Interstate-5. The SEA boundary generally follows the natural area near the Griffith Park boundaries in most cases. Isolated areas are important for preserving and documenting the geographical variability of vegetation and wildlife that formerly occurred throughout the region. They serve as reservoirs of native species that could be of scientific and economic value in the future. In addition, birds rely on these islands for areas to rest and feed along their north-south and east-west migration routes. In the case of Griffith Park, this function is made even greater than might be expected because it serves as a corridor for any gene flow and species movement that may take place between the Santa Monica and San Gabriel mountains via the Verdugo Mountains.

Beginning in the northwest corner, and proceeding eastward, the SEA follows the natural vegetation on the mountain slopes at the junction with the flood plain of the former Dark Canyon and the Los Angeles River. This area of the SEA includes the recently-acquired (2010) Cahuenga Peak, at 1820 feet, which is now the highest point of Griffith Park. Cahuenga Peak slopes have rocky outcrops,

chaparral, and regenerating oak woodland and chaparral on the north-facing slopes. (This area was part of the 800 acres burned in the Griffith Park Fire of 2007.)

The Los Angeles River is channelized, but there is remnant oak riparian woodland in this area. Bordering the apartment complex on the east side of Barham Boulevard, there is a somewhat abrupt change in slope where the previous Dark Canyon Creek flowed. (Barham Boulevard was evidently constructed in this Canyon.) The SEA includes the remnant riparian coast live oak woodland (*Quercus agrifolia)*, which has many jurisdictional oak trees and in many places, the natural understory. Residents and staff at the apartments report frequent sightings of wildlife, particularly mule deer (*Odocoileus hemionus*) and coyotes (*Canis latrans*), in their parking lots, which line the Griffith Park side of the complex. On the slopes above, the chaparral of this west-facing slope grades upward into an extensive area of coastal sage scrub. The SEA includes these natural areas. From the natural areas on slopes above the junction of Barham Boulevard and Forest Lawn Boulevard, the SEA boundary continues eastward along the border of natural vegetation on the slopes above Forest Lawn Boulevard, including oak woodland in the ravines and mixed chaparral and grassland on the upper slopes. Occasionally, an ash (*Fraxinus velutina*) or Southern California black walnut (*Juglans californica*) are in these ravines, along with oak trees and other chaparral plants.

The boundary follows natural vegetation southward, away from the Los Angeles River, at the boundary of Forest Lawn Memorial Park (Forest Lawn). A slope and ridge top that have been cleared by Forest Lawn have been excluded from the SEA, but the chaparral on the east-facing side of the slope is included. From this ridge, the SEA roughly follows at the edge of the natural areas around the south side of the Forest Lawn and returns northward on the parcel line between the Forest Lawn and Griffith Park.

From the east side of Forest Lawn, the SEA boundary includes a chaparral-covered slope that is south of Travel Town and Zoo Drive. Cooper and Mathewson (2008) describe how coastal sage scrub occurs through a broad section of the northern part of Griffith Park, from end to end with patches of the sensitive valley needlegrass grassland. From the natural area near the Interstate-5 and State Route-134 interchange, the SEA boundary swings around westward, north of the Los Angeles Zoo, and forming a lobe on the chaparral-covered slopes. This area has ravines and a gradually sloping area near Travel Town, with riparian forest that includes sycamores (*Platanus racemosa*), oaks, willows (*Salix* spp.), and mulefat (*Baccharis salicifolia*), which are easily seen along Griffith Park Drive. Travel Town is not in the SEA, but its periphery of native riparian and chaparral is included. The north-facing upper slopes have chaparral, and the south-facing upper slopes have coastal sage scrub or grassland with chaparral plants here and there, especially elderberry (*Sambucus* spp.) Along Zoo Drive, ravines have typical chaparral of north-facing slopes. The SEA boundary continues past the Los Angeles Zoo along a road to a landfill area within Griffith Park, and goes around the landfill, forming a cherry-stem shaped area at the landfill road, and then continuing southeastward on the west side of Griffith Park Drive, excluding the Harding Municipal Golf Course. The Spring Canyon picnic area is excluded, as the understory of the sycamores and oaks is unnatural lawn, and the SEA boundary continues south along natural vegetation along Griffith Park Drive to the southern boundary of Griffith Park, near the Los Feliz offramp from the Interstate-5. A golf course practice area at the corner is excluded from the SEA.

From the southeast corner, the SEA boundary goes west along with the Griffith Park boundary at the edge of development to another golf course, which is excluded due to extensive modification of the slopes. The Greek Theater in Vermont Canyon and Griffith Park Observatory on the slope beyond are included, as the modified vegetation for each covers less than 40 acres. The SEA boundary

continues west and then north with the Griffith Park boundary at the edge of development. A small quarry is excluded. The undeveloped upper Brush Canyon in Griffith Park is included. Griffith Park and SEA have oak woodland along the drainages, transitioning uphill into chaparral and then grassland on the upper slopes. Within Griffith Park, north-facing sides of rocky outcrops often have a cliffside vegetation that is characterized by multiple kinds of lichens, mosses, liverworts and other non-vascular plants along with live-forever (*Dudleya* spp.), and other flowering plants. The SEA boundary follows Griffith Park boundaries around the development in the Blackwood Canyon area. A ridge area in Griffith Park on the south side of Mulholland Drive overlook is excluded. The SEA boundary follows Griffith Park boundaries on the southern edge and then turns north after including the grassland and coastal sage scrub-covered slopes that cover the open area between the two northern arms of the Hollywood Reservoir. On the west side of the SEA, the boundaries lap west outside of Griffith Park boundaries to include the oak woodland and chaparral of the lower elevations of Cahuenga Peak in the neighborhood of Dark Canyon (Barham Boulevard) and Caguenga Pass.

Vegetation

Vegetation within the SEA is comprised of a large variety of community types. The diversity of the communities reflects the topography of the mountainous park and include coastal sage chaparral scrub, riparian and coast live oak woodland, riparian, many kinds of chaparral, grassland, and cliffside vegetation. The maintenance of the diverse vegetation mosaic and the contacts of the different vegetation types (ecotones) has been cited as one of the principal qualities of importance to maintaining biotic diversity in Griffith Park (Cooper & Mathewson, 2008). The southern slopes are affected by more moist marine weather conditions, while the northern slopes are influenced by drier inland weather conditions. In addition, the steepness of many slopes causes sharp differences in vegetation on either side of a ridge. Sensitive plant species and plant communities occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

Chaparral: A shrub community composed of robust species. Within this SEA, a number of chaparral subcommunities are found, and differentiated by their dominant plant species. These include chamise (*Adenostoma fasciculatum*), buck brush (*Ceanothus* spp.), scrub oak (*Quercus berberidifolia*), coast live oak (*Quercus agrifolia* var. *agrifolia*) and mosaics of these depending on mixture of species and elevation. These and other shrub species form dense vegetation covers, and grow 5 to 10 feet in height. The development of chaparral is pronounced over large hillside areas throughout the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus greggii* [*vestitus*] (cup leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus spinosus* (greenbark ceanothus chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance

- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Coastal Sage Chaparral Scrub: A shrubland community exhibiting less robust structure found in this SEA. This plant community is dominated by California sagebrush (*Artemisia tridentata*), California brittle bush (*Encelia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), and California buckwheat (*Eriogonum fasciculatum*). Dense stands may grow three to four feet in height. Within this SEA, it is generally found in scattered patches, which are highly integrated with mixed chaparral. These are located throughout the SEA at middle elevations and on hillsides.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Opuntia littoralis* (coast prickly pear scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Coast Live Oak Woodland: A plant community dominated by *Quercus agrifolia.* Within this SEA, this community includes coast live oak, which typically grows to heights of 20 to 40 feet, and forms either closed or open tree canopies. Oak woodland is most commonly found on north-facing slopes and in drainage bottoms and often intergrades with shrub communities. Understory vegetation varies from grassland in level areas to shrubs where topography is steeper.

Corresponding MCV community:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Riparian Forest: Along the major drainages riparian forest is found, which typically grows along streams in bedrock-constrained, steep-sided canyons, which results in a fairly narrow riparian corridor. The specific dominant plants are not known but riparian trees such as California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia*), coast live oak, western sycamore (*Platanus racemosa*) and willow (*Salix* spp.) occur. There are also a greater number of hydrophytic (moister favoring) plant species in the understory.

Corresponding MCV communities:

- *Alnus rhombifolia* (white alder groves) Forest Alliance
- *Umbellularia californica* (California bay forest) Forest Alliance
- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Platanus racemosa* (California sycamore woodlands) Woodland Alliance

Wildlife

Mammals making their home in Griffith Park include mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), raccoon (*Procyon lotor*), red fox (*Vulpes vulpes*), common gray fox (*Urocyon cinereoargenteus*), Virginia opossum (*Didelphis virginiana*), striped skunk (*Mephitis mephitis*), California ground squirrel (*Spermophilus beecheyi*), the non-native eastern fox squirrel (*Sciurus niger*), and house mouse (*Mus musculus*). Bobcat (*Lynx rufus*) have been observed in the northwest and eastern portions of Griffith Park, and there have been sightings of a mountain lion (*Puma concolor*) that some believe may have incorporated Griffith Park into its range.

The last survey of insects in Griffith Park was in the spring 2003, which was a year with a cool, late spring; it is not clear how that weather impacted the survey results. During that survey, the most frequently observed butterfly was the gulf fritillary (*Agraulis vanillae*), which uses ornamental passion vines as a host plant. Bumblebees and honeybees were the most abundant bee species, although carpenter bees were also observed. Sand wasps were observed along some of the hiking trails, where sandy patches are present. Scorpions, tarantulas and other spiders are commonly observed.

Amphibians observed in Griffith Park have included arboreal salamander (*Aneides lugubris*), California slender salamander (*Batrachoseps attenuatus*), Baja California chorus frog (*Pseudacris hypochondriaca*) and California toad (*Anaxyrus halophilus*). Non-native amphibians found in many streams in Griffith Park are the American bullfrog (*Lithobates catesbeianus*) and the African clawed frog (*Xenopus laevis*). In addition to stream habitats, the Los Angeles River, on the eastern side of Griffith Park provides abundant habitat for amphibians.

Reptiles identified in Griffith Park include the Great Basin fence lizard (*Sceloporus occidentalis longipes*), western skink (*Plestiodon skiltonianus skiltonianus*), San Diego alligator lizard (*Elgaria multicarinata webbii*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), western side-blotched lizard (*Uta stansburiana elegans*), California legless lizard (*Anniella pulchra*), California striped racer (*Coluber lateralis lateralis*), red racer (*C. flagellum piceus*), California kingsnake (*Lampropeltis getula californiae*), San Bernardino ringneck snake (*Diadophis punctatus modestus*), San Diego gopher snake (*Pituophis catenifer annectens*), and southern Pacific rattlesnake (*Crotalus oreganus helleri*).

Ornithologists have identified about 200 bird species in Griffith Park, and about 150 of those are regularly seen (every year–Cooper and Mathewson 2008). Griffith Park is also an important stopover for migrating birds and provides an abundance of habitat for wintering birds. Resident birds during the 2003 survey included the acorn woodpecker (*Melanerpes formicivorus*), American crow (*Corvus brachyrhynchos*), Anna's hummingbird (*Calypte anna*), Bewick's wren (*Thryomanes bewickii*), bushtit (*Psaltriparus minimus*), California towhee (*Melozone crissalis*), California quail (*Callipepla californica*), California thrasher (*Toxostoma redivivum*), common raven (*Corvus corax*), European starling (*Sturnus vulgaris*, non-native), great horned owl (*Bubo virginianus*) and the red-tailed hawk (*Buteo jamaicensis*). Migratory birds include the ash-throated flycatcher (*Myiarchus cinerascens*),

black-chinned hummingbird (*Archilochus alexandri*), black-headed grosbeak (*Pheucticus melanocephalus*) and western wood-pewee (*Contopus sordidulus*). Aquatic species, such as herons, egrets, ducks and migrating geese are seen in the Los Angeles River as it flows by Griffith Park. These species are also observed on the golf course water features within Griffith Park.

Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

Griffith Park has become increasingly isolated from the rest of the Santa Monica Mountain Range, the Los Angeles River, the Los Angeles Basin, the San Fernando Valley, and the Verdugo Mountains (a little less than two miles to the east) because of the freeways, concrete river projects and urbanization that surround Griffith Park. Although some species have disappeared, including the ringtail (*Bassariscus astutus*), the gray fox is still seen.

River-bed vegetation is quickly returning in the Los Angeles River as sand deposits on the hard channel bottom, and re-vegetation should be encouraged. Major bird and mammal populations exist on the re-vegetated portions of the Los Angeles River. Although some stretches of the Los Angeles River may not provide suitable primary corridors, it is important to reinstate Griffith Park's connection to the Los Angeles River for the future of wildlife and plant connectivity. In the management draft for Griffith Park wildlife (Cooper and Mathewson 2008), the authors outline some of the important connections to maintain or enhance: bridges and underpasses over and under State Route-101 and culverts that feed into the Los Angeles River Channel.

Griffith Park is viewed as an important connective island for the Santa Monica Mountains to the west of State Route-101 and the Verdugo Mountains and San Gabriel Mountains to the east. Wildlife may also use the natural areas and even concrete channels of the Los Angeles River to connect to the Tujunga Wash and Hansen Dam SEA and to the San Gabriel Mountains.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include chamise-white sage chaparral, holly leaf cherry chaparral, California brittle bush scrub, California bay forest, and California sycamore woodlands, which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and

composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Braunton's milk-vetch (*Astragalus brauntonii*) FE, RPR 1B.1
- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Lewis' evening-primrose (*Camissonia lewisii*) RPR 3
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) FC, SE, RPR 1B.1
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) RPR 1B.1
- Many-stemmed dudleya (*Dudleya multicaulis*) RPR 1B.2
- Palmer's grapplinghook (*Harpagonella palmeri*) RPR 4.2
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- California Orcutt grass (*Orcuttia californica*) FE, SE, RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Gertsch's socalchemmis spider (*Socalchemmis gertschi*) CDFG Special Animals List
- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Coast range newt (*Taricha torosa*) SSC
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) FSS, SSC
- Pacific pocket mouse (*Perognathus longimembris pacificus*) FE, SSC
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

Criteria Analysis of the Griffith Park SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	No known core populations occur within this SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Not Met	No known unique or rare plant or animal species occur within this SEA that would be regionally uncommon. No rare plant habitats occur in Griffith Park. Griffith Park has extensive wild areas that are little studied according to Cooper and Mathewson 2008. Such areas could be discovered.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Not Met	No known unique or rare plant or animal species occur within this SEA that would be particularly uncommon in the County. No rare plant habitats are known in Griffith Park. Griffith Park has extensive wild areas that are little studied according to Cooper and Mathewson 2008. Such areas could be discovered.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	Griffith Park is the easternmost extent of the Santa Monica Mountains, and a stepping stone to the Verdugo and San Gabriel mountains, which are only two miles distant. It is a very important natural area for animals and plants species that go between the Santa Monica and San Gabriel mountains. Because of its large acreage, Griffith Park maintains sizable populations of biological communities, even top predators, such as bobcats. Griffith Park is teetering between becoming an island of natural habitat in a metropolis and maintaining connections to the rest of the Santa Monica Mountains to the west.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	Griffith Park is the easternmost extent of the Santa Monica Mountains, and a stepping stone to the Verdugo and San Gabriel Mountains, which are only two miles distant. It is a very important natural area for animals and plants species that go between the Santa Monica and San Gabriel mountains. Because of its large acreage, Griffith Park maintains sizable populations of biological communities, even top predators, such as bobcats. Griffith Park is teetering between becoming an island of natural habitat in a metropolis and maintaining connections to the rest of the Santa Monica Mountains to the west.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Griffith Park has extensive areas of coastal chaparral and is an island of refuge for native animals in the Santa Monica Mountains. Its mosaic of habitats includes coastal sage scrub, riparian areas, and southern oak woodland. The mosaic of habitats is especially valuable to preserve. Griffith Park is in the City of Los Angeles and protected in this respect, but no management plan preserves its natural habitat in perpetuity.

In conclusion, the area is an SEA because it contains: D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Harbor Lake Regional Park SEA

Location

General

The Harbor Lake Regional Park Significant Ecological Area (SEA) is located [within Kenneth Malloy Harbor Regional Park] in the Harbor City community of the City of Los Angeles, which is approximately 15 miles south of downtown Los Angeles and just west of the Interstate-110. The Lake is named "Machado Lake." The SEA supports one of three remaining wetlands that once covered the southern and western areas of the Los Angeles Basin. The SEA supports significant areas of aquatic and terrestrial plant communities, which provide habitat to a variety of birds and wildlife.

The site is located in the Torrance Quadrangle of the United States Geological Survey (USGS) 7.5 Minute Map Series (USGS, 1964).

General Boundary and Resources Description

The SEA boundaries encompass the lake areas that contribute to the biological function of the Harbor Lake ecosystem. It is bordered to the north by the Pacific Coast Highway, but includes a small segment of drainage, the Wilmington Drain ("Bixby Slough") north of Pacific Coast Highway. The slough is a secluded marsh that supports wildlife and waterfowl common to marsh areas. Thirty-five species of native birds have been observed breeding in the Wilmington Drain and a large number of interesting vagrants are recorded from this area. Following the Wilmington Drain segment, the boundary travels east along the south side of Pacific Coast Highway and south along the east boundary of Harbor Regional Park to the Harbor Park Municipal Golf Course. The SEA goes east to a parking area for the golf course. The golf course is included in the SEA to emphasize the need to keep this area green. Wildlife from the adjacent woodlands use the golf course to transit between natural areas of the park in a less-populated area. The eastern boundary of the SEA includes the greens and excludes parking areas around the periphery of the golf course. The SEA goes west along the boundary of the natural riparian woodland of the park and golf course and then southwest along the boundary of marsh habitats of the park and the golf course. At the south end of the golf course, the SEA boundary goes generally southeast along the periphery of park and developed environment, much of it along the outer southern boundary of Los Angeles Harbor College. The SEA stops at the college southern frontage paved area, then turns west along Anaheim Street with the park boundary, excludes a graded and cleared area of the park in the southwest corner, and then goes with the park boundary north along Vermont Avenue to the Pacific Coast Highway. At the Pacific Coast Highway, the SEA boundary goes with the park boundary to the Wilmington Drain. Machado Lake is chiefly bordered by native marsh vegetation of cattails, rushes, reeds, and mulefat with some invasive giant cane (*Arundo donax*) and upland native riparian forest, which primarily consists of willows. The exception to the natural vegetation is along Vermont Avenue where lawns are maintained between parking areas and the lake for public recreation and picnicking. The bird species list has over 330 species, and the area is used by migrant birds on the Pacific Flyway during the spring and fall migration periods. The SEA lies generally west of the Interstate-110.

The SEA encompasses regionally unique areas, including one of three remaining wetlands that once covered the South Bay area. The freshwater plants and animals found here are completely surrounded by residential and industrial facilities. This type of habitat has been filled, drained, and lost to development throughout most of the County. In some areas, man-made lakes and ponds have created small freshwater marshes along their edges, but this is minimal in comparison to the large expanses of freshwater marsh that were once found in the Los Angeles Basin.

Freshwater marsh habitat supports a great diversity of wildlife. Most of the bird species found here are dependent in some way on the surface moisture and vegetation, and would not be able to survive without it. It is also a habitat that supports several species of amphibians. Frogs and toads can be found here that are becoming extremely difficult to find throughout Southern California. The marsh is also an important area for migratory birds. Because Harbor Lake Regional Park and Madrona Marsh are the only habitat of this type in the southern portion of the County, they serve as small scale wildlife refuges. Waterfowl, shorebirds, marsh birds, and others can be found on the marsh in numbers during the spring and fall migration.

Vegetation

The SEA encompasses southern cottonwood-willow riparian forest, southern willow scrub, mulefat scrub, Venturan coastal sage chaparral scrub, “modified” coastal freshwater marsh, vernal marsh, and non-native grassland. Immediately bordering Machado Lake are emergent wetland species, such as bulrushes, cattails, and non-native water primroses (*Ludwigia peploides*). Also within the SEA are ornamental grasses, mature non-native trees, exotic invasive plant species. The coastal freshwater marsh and vernal marshes margins support limited densities of native grasses, but these do not form separate communities and are included within the vernal pool floral matrix. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs*, in addition to other studies conducted for the specific area. Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

<u>Southern Cottonwood-Willow Riparian Forest</u>: An open broad-leafed winter-deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*), black willow (*Salix gooddingii*), and red willow (*S. laevigata*). This community occurs along moister sections of drainages, ponds, and lakes.

Corresponding MCV communities:

- *Populus fremontii* (Fremont cottonwood woodlands) Forest Alliance
- *Salix gooddingii* (black willow thickets) Woodland Alliance
- *Salix laevigata* (red willow thickets) Woodland Alliance

<u>Southern Willow Scrub</u>: A riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets occurring within and adjacent to watercourses. The dominant species of this community within the SEA are arroyo willow (*Salix lasiolepis*) with lesser amounts of mulefat (*Baccharis salicifolia*). This community occurs in along less moist portions of drainages as well as the periphery of ponds and lakes.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Mulefat Scrub: A thicket occurring in seasonally and intermittently flooded habitats in riparian corridors or along lake margins.

Corresponding MCV Community:

- *Baccharis salicifolia* (mulefat thicket) Shrubland Alliance

Freshwater Marsh: Develops in areas of still or slow-moving permanent freshwater. This community is dominated by the perennial, emergent monocot cattails, which reach a height of four to five meters and often form a closed canopy. Bulrushes are dominant below the cattail canopy. Freshwater marsh is relatively uncommon; it occurs in small patches in natural or created sinks with water sources.

Corresponding MCV communities:

- *Lepidium latifolium* (perennial pepper weed patches) Semi-Natural Herbaceous Stands
- *Eleocharis macrostachya* (pale spike rush marshes) Herbaceous Alliance
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha* (*angustifolia*, *domingensis*, *latifolia*) (cattail marshes) Herbaceous Alliance
- *Juncus arcticus* (var. *balticus*, *mexicanus*) (Baltic and Mexican rush marshes) Herbaceous Alliance
- *Juncus effusus* (soft rush marshes) Herbaceous Alliance
- *Lemna* (*minor*) *and relatives* (duckweed blooms) Provisional Herbaceous Alliance

Vernal Pool Sites: Occur in several different areas within the SEA where unique sub-surface conditions of shallow layers of less permeable horizons allow for seasonal accumulations of freshwater. True vernal pools, which are rare in Southern California and extremely rare in the County, form seasonally in shallow, closed basins, usually where a lens of heavy clay soil holds surface water following rainfall events.

Corresponding MCV communities:

- *Eleocharis macrostachya* (pale spike rush marshes) Herbaceous Alliance
- *Juncus arcticus* (var. *balticus*, *mexicanus*) (Baltic and Mexican rush marshes) Herbaceous Alliance
- *Juncus* (*oxymeris*, *xiphioides*) (iris-leaf rush seeps) Provisional Herbaceous Alliance

Non-Native Grassland: Consists of dominant invasive annual grasses that are primarily of

Mediterranean origin. Dominant species found within this community include wild oat (*Avena fatua*), slender oat, red brome, ripgut brome (*Bromus diandrus*), and herbs such as black mustard and wild radish.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) [*Bromus madritensis* ssp. *rubens*] Semi-Natural Herbaceous Stands
- *Lolium perenne* [*Festuca perennis*] (perennial rye grass fields) Semi-Natural Herbaceous Stands

Venturan Coastal Sage Chaparral Scrub: Described as present and is characterized by the summer drought deciduous vegetation found near the Southern California coast south of Ventura County of low, mostly soft-woody shrubs with bare ground underneath and between shrubs. This community is dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and California brittle bush (*Encelia californica*).

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance

Wildlife

Wildlife diversity and abundance within the SEA is moderate, commensurate with the relative homogeneity of the natural open space habitat types. Wildlife within much of the SEA is comprised of species typically occurring within freshwater and vernal pools. Birds of prey frequently forage over the pools and open grasslands, which form following the seasonal drying of the surface water. The Harbor Lake Regional Park vernal pools provide rare surface water habitat for wildlife in an otherwise developed region, and the ponds attract moderate numbers and diversity of migratory

waterfowl. A number of local wildlife species are strictly limited to seasonal pool habitats. The vernal pool system in the Harbor Lake and also those in nearby Madrona Marsh Preserve SEA constitute the only local functional ecosystems of this unique type for wildlife species.

Freshwater marsh habitat supports a great diversity of wildlife. Most of the bird species found here are dependent in some way on the surface moisture and vegetation, and would not be able to survive without it. It is also a habitat that supports several species of amphibians. Frogs and toads can be found here that are becoming extremely difficult to find throughout Southern California. The marsh is also an important area for migratory birds. Because Harbor Lake Regional Park and Madrona Marsh are the only habitat of this type in the southern portion of the County, they serve as small-scale wildlife refuges. Waterfowl, shorebirds, marsh birds, and others can be found on the marsh in numbers during the spring and fall migration.

Coastal sage chaparral scrub habitats with persistent surface hydrology during the breeding season supports abundant populations of Baja California chorus frog (*Pseudacris hypochondriaca*), California toad (*Anaxyrus halophillus*), and western spadefoot (*Spea hammondii*). At least two species of salamander may also be present within more mesic portions of the surrounding canyons and chaparral.

Bird diversity within the SEA is related to habitat opportunities for year-round residents, seasonal residents, migrating raptors and song birds. Open coastal sage chaparral scrub hosts a suite of birds that are typical of such sites at lower elevations over most of the coastal slopes of Southern California. The most productive sites for resident coastal sage chaparral scrub birds are around riparian and freshwater systems, which attract large numbers of migrants during the spring and fall. The vernal pools attract moderate numbers of migrating waders and waterfowl, and provide important winter foraging areas for resident and migratory birds of prey. Birds of prey typically observed around vernal pools include red-tailed hawk and American kestrel.

Wildlife species previously recorded, as well as those expected to occur, within the study area are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The vernal pools situated within this SEA serve as isolated, high-quality habitat and linkage resource for migratory waterfowl. The vernal pools teem with arthropod and amphibian activity, and provide essential feeding grounds for long-distance migrants, as well as for resident species of reptiles, birds and mammals. The SEA does not lie within any identified terrestrial movement routes for wildlife.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

The SEA is configured to encompass the regionally significant vernal pools and coastal sage chaparral scrub watershed. Changes to the classification system in some cases divides plant communities into many possible vegetation alliances, not all of which may be considered sensitive. For the purposes here previously listed communities with a least one sensitive alliance in the new format have been listed.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The SEA is configured to encompass regionally significant communities, which include Fremont cottonwood woodlands, black willow thickets, iris-leaf rush seeps, California brittle bush scrub, and all vernal pool sites. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Aphanisma (*Aphanisma blitoides*) RPR 1B.1
- Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*) FE, SE, RPR 1B.1
- Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
- South Coast saltscale (*Atriplex pacifica*) RPR 1B.2
- Parish's brittlescale (*Atriplex parishii*) RPR 1B.1
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) RPR 1B.2
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- Salt marsh bird's-beak (*Chloropyron maritimum* ssp. *maritimum*) FE, SE, RPR 1B.2
- Mud nama (*Nama stenocarpum*) RPR 2.2
- Moran’s navarretia (*Navarretia fossalis*) FT, RPR 1B.1

- Prostrate vernal pool navarretia (*Navarretia prostrata*) RPR 1B.1
- Estuary seablite (*Suaeda esteroa*) RPR 1B.2
- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- California Orcutt grass (*Orcuttia californica*) FE, SE, RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Vernal pool fairy shrimp (*Branchinecta lynchi*) FT
- San Diego fairy shrimp (*Branchinecta sandiegonensis*) FE
- Riverside fairy shrimp (*Streptocephalus woottoni*) FE
- Mimic tryonia (*Tryonia imitator*) CDFG Special Animals List
- Monarch butterfly (*Danaus plexippus*) CDFG Special Animals List
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Tricolored blackbird (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) SE
- Bank swallow (*Riparia riparia*) ST
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- South coast marsh vole (*Microtus californicus stephensi*) SSC
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- Pacific pocket mouse (*Perognathus longimembris pacificus*) FE, SSC
- Southern California saltmarsh shrew (*Sorex ornatus salicornicus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE HARBOR LAKE REGIONAL PARK SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	This SEA does not contain habitat that supports a core population
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	SEA supports a sizeable lake with a freshwater marsh along its northern, eastern and southern shores and the Bixby Slough, habitats that once covered the South Bay area. This type of habitat has been filled, drained, and lost to development throughout most of Southern California.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	Harbor Lake Regional Park is one of three remaining wetlands with freshwater marsh in the County. (The others are Madrona Marsh and recreated Ballona Freshwater Marsh, which are also in SEAs.) This type of habitat once covered much of the southern and western Los Angeles Basin area, and supports several species of amphibians including frogs and toads that are becoming rare throughout Southern California.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in County.	Met	Harbor Lake Regional Park and its marshes is an important area for migratory birds. The list of number of bird species seen has over 330 species. Freshwater marshes are important breeding areas for a number of birds and amphibian species.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The Harbor Lake freshwater marsh has attracted considerable attention from the academic and scientific communities, and the resources of the area are well documented and continue to be studied.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The freshwater marsh is a good example of the freshwater marshes that used to occur along the fault lines of the Los Angeles Basin.

In conclusion, the area is an SEA because it contains: B-C) a sizeable lake with a freshwater marsh along its eastern shore and the Bixby Slough, habitats that once covered the South Bay area. This type of habitat has been filled, drained, and lost to development throughout most of Southern California and the County. Three of these habitats remain in the County; D) the Harbor Lake Regional Park is habitat that serves as concentrated breeding, feeding, resting, and migrating grounds and is limited in availability both regionally and in the County; E) the Harbor Lake freshwater

marsh has attracted considerable attention from the academic and scientific communities, and the resources of the area are well documented and continue to be studied; and F) the freshwater marsh is a good example of the freshwater marshes that used to occur along the fault lines of the Los Angeles Basin.

Joshua Tree Woodlands SEA

Location

General

The Joshua Tree Woodlands Significant Ecological Area (SEA) is located in the western portion of the Antelope Valley west and northwest of the Antelope Valley California Poppy Reserve in an unincorporated area of the County. This SEA encompasses many of the remaining old-growth stands of Joshua trees (*Yucca brevifolia*) on the west side of the Antelope Valley. Joshua tree woodland is a complex biological community of the gradual slopes of higher elevation desert areas that once covered much of this part of the Antelope Valley around the Antelope Wash. Joshua trees only occur within the Mojave Desert, and the County population is the western extreme location for the species.

Because Joshua trees live in areas that are easily developed for residences and agriculture, this habitat has become very fragmented in the County. The SEA consists of eight separate units, seven of which are in close proximity to each other between the Kern-Los Angeles County line to the north, and the California Aqueduct and Fairmont Butte to the south. The eighth unit is in an arroyo on the north side of the principal western ridgeline of Liebre Mountain, which is near the furthest western extent of Joshua tree woodland in Southern California. This woodland is located partially within the Angeles National Forest, and east and adjacent to the Interstate-5. The eighth unit is bordered on three sides by the San Andreas SEA.

All of the SEA except unit 8 is designated as the Antelope Valley Globally Important Bird Area (IBA) by the California Audubon. This part of the Antelope Valley is very important as a resource area that supports spring and fall migration of birds, from the small passerines to the larger raptors, such as the state-threatened Swainson's hawk (*Buteo swainsoni*) and turkey vultures (*Cathartes aura*). The Joshua tree woodland is a very important resource to these migrations by supplying perches and food for these animals on their journeys. The SEA is near the San Andreas SEA, the Antelope Valley California Poppy Reserve, the Arthur B. Ripley Desert Woodland State Park, and the County George F. Bones Desert Pines Wildlife Reserve; however, many of these areas are not contiguous with one another nor with the SEA. Unit 2 of the SEA includes much of the Arthur B. Ripley Desert Woodland State Park. Unit 8 of the SEA is contiguous with the San Andreas SEA.

Fragmentation is a concern because the Joshua trees depend on a small moth for reproduction. Only two species of moth can successfully pollinate Joshua trees, and in the SEA, there is only the yucca moth (*Tegeticula synthetica*). The moth may have limited dispersal abilities, and the Joshua trees cannot reproduce from seeds without pollination from this particular moth. Cross pollination is regarded as essential to a species' genetic diversity, which is essential to adaptation to environmental change.

The Joshua trees in the seven units have the growth form of the lower elevation woodlands of the flatter areas, and somewhat spaced from one another and less clumped. The Joshua trees in the eighth unit have a growth form that is more common in the hilly areas, where the individuals sprout from connected rhizomes and are clumped. Many times, these clumps are clones, with individuals all

sharing the same genetic identity.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Neenach School, Fairmont Butte, Black Mountain, and Lebec.

General Boundary and Resources Description

The SEA is composed of eight units. The overall boundaries are as follows: The western boundary for units 1-7 terminates at 220th Street West (the border between Ranges 15W and 16W). The eastern boundary is 145th Street West. The northern boundary is on Avenue A at the Kern-Los Angeles County line. The southern boundary straddles the California Aqueduct, touches the Los Angeles Aqueduct, and is approximately on Avenue F. The southernmost area is located close to the foothills of the western San Gabriel Mountains.

Unit 1: The northernmost unit is bounded by Avenue A on the Kern-Los Angeles County line on the north between 200th Street West and approximately on 218th Street West. It extends irregularly to the south along a desert wash contour, about a 0.7 mile at its greatest extent. The current southern boundary is determined by agricultural clearing. This unit has a Joshua tree woodland with many shrub components of the biological community intact, including a floor covered by the wildflower goldfields (*Lasthenia glabrata*) in the spring.

Unit 2: Another unit is located between Avenue C to the north and Avenue F to the south (straddling part of State Route-138 on Avenue D and part of Lancaster Road on Avenue E), and east to west from about 200th Street to about 220th Street West. Clearance in various parcel units accounts for this unit's irregular shape. Agricultural clearing on both sides of the Antelope Wash has separated this unit from unit 1 to the north. The intervening area is a broad wash plain with rich alluvial soils. The former agricultural fields may now become fields of photovoltaic panels to generate renewable energy. This unit has a southern square mile that straddles the California Aqueduct and touches the Los Angeles Aqueduct at the base of the San Gabriel Mountains. In the northern area, this unit has old-growth Joshua tree woodlands on a rocky ridge that grades into stands of Joshua trees and woodland that includes California junipers (*Juniperus californica*) in flatter areas toward the south. The southern and eastern parts of this unit overlap with much of the Arthur B. Ripley Desert Woodland State Park. The California Aqueduct is open in this area and is an important resource for bird migration along the desert slopes of the western San Gabriel Mountains, particularly waterfowl. The Los Angeles Aqueduct is generally in concrete pipe for most of its extent, and in this area, is covered by a berm and road. A colony of burrowing owls (*Athene cunicularia*), which is a state species of special concern, was discovered during surveys for an adjacent photovoltaic panel development, and probably other colonies or individuals of the owl live within this unit.

Unit 3: Another unit is located between Avenue D to the north and Avenue E to the south, and between 190th Street and 195th Street West. It is on the broad outwash alluvial area of Kings Canyon and adjacent drainages. This outwash area is somewhat blocked by the aqueducts, but both aqueducts are provided with underpass channels for outflow of the canyons onto the desert floor. The SEA includes a central cleared area that is regenerating the Joshua tree woodland and a residence with less than 40 acres cleared. The area next to Avenue D that has been cleared of Joshua trees is not included.

Unit 4: The square mile between Avenue C and Avenue D, and between 180th Street and 190th Street West has a good stand of Joshua tree and juniper woodland. This is also in the Kings Canyon alluvial wash area. There is a known area of Joshua tree regeneration to the east that is not included in the SEA.

Unit 5: The quarter square mile between Avenue C-5 and Avenue E, and between 180th Street and 185th Street West, is also on the Kings Canyon alluvial wash area and has a good stand of Joshua tree and juniper woodland.

Units 6: An area of a little over one-eighth square mile is located at the corners of both units 4 and 5. It is between Avenues D and E and between 180th Street and what would be 174th Street West. This is also in the Kings Canyon alluvial wash area and has a good stand of Joshua tree and juniper woodland.

Unit 7: A large irregular unit is located roughly between Avenue B, Avenue C5, 145th Street and 180th Street West. It has an extensive area of Joshua tree-juniper woodland that grades into stands of Joshua trees towards the east. There is a known area of Joshua tree regeneration in former agricultural fields between 160th Street West and 170th Street West that is not included in the SEA. The alluvial wash in the SEA is a combined area of outflow from Kings Canyon, unnamed canyons, and Broad Canyon.

Unit 8: The eighth unit is in an arroyo on the north side of the principal western ridgeline of Liebre Mountain, which is near the furthest western extent of Joshua tree woodland in Southern California. This woodland is located partially within the Angeles National Forest. It is east and adjacent to the Interstate-5. The eighth unit is bordered on three sides by the San Andreas SEA. This woodland has the clonal growth that is typical of Joshua trees in hilly areas.

The SEA is located primarily on the western Antelope Valley floor between the Tehachapi Mountains and the western San Gabriel Mountains. The topography of the SEA is extremely flat with the land sloping less than 200 feet in approximately five miles. The location and orientation of the SEA represents a matrix of remnant stands of Joshua tree woodland among a patchwork of disturbed areas. Nearly all of the land within the SEA is undisturbed and vegetated. Most of the land surrounding the SEA is disturbed by agricultural use, and also has some scattered rural residences. The SEA is entirely withiin the unincorporated area of the County.

Vegetation

Vegetation within the SEA is limited to a few communities with relatively few species. However, the dominant community, the Joshua tree woodland, is in good condition throughout most of the SEA and includes many mature stands. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA, including desert scrub, non-native grassland, Joshua tree woodland, juniper woodland, and disturbed are given below.

<u>Desert Scrub</u>: A moderately tall, fairly open shrubland with several species contributing to the canopy. Dominants often include Great Basin sagebrush, antelope bush, saltbush, and/or rabbitbrush, with several perennial grasses dispersed between the shrubs. Within the SEA, this community intergrades with Joshua tree woodlands.

Corresponding MCV communities:

- *Artemisia tridentata* (big sagebrush) Shrubland Alliance

- *Acacia greggii* (catclaw acacia thorn scrub) Shrubland Alliance
- *Ericameria nauseosa* (rubber rabbitbrush scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Ephedra californica* (California joint fir scrub) Shrubland Alliance
- *Yucca brevifolia* (Joshua tree woodland) Woodland Alliance
- *Grayia spinosa* (spiny hop sage scrub) Shrubland Alliance
- *Gutierrezia sarothrae* (broom snake weed scrub) Provisional Shrubland Alliance
- *Purshia tridentata* (bitter bush scrub) Shrubland Alliance

Grassland Communities: Consist of low, herbaceous vegetation that are dominated by grasses, but generally also harbor native forbs and bulbs, as well as naturalized annual forbs. Grasslands within the SEA consist of non-native grasslands alone. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender oats, wild oat (*Avena fatua*), ripgut brome (*Bromus diandrus*), red brome (*Bromus madritensis* ssp. *rubens*), goldentop (*Lamarckia aurea*), *Schismus*, and wild mustard. Non-native grasslands are located in small patches that interming with Joshua tree woodland throughout the SEA.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other Mustards (upland mustards) Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*,*hordeaceus*)-*Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Centaurea* (*solstitialis*, *melitensis*) (yellow star-thistle fields) Semi-Natural Herbaceous Stands

Joshua Tree Woodland: An open woodland with Joshua tree (*Yucca brevifolia*), usually as the only arborescent species with numerous smaller shrub species interspersed between. Shrub species include Great Basin sagebrush, antelope bush, saltbush, rabbit brush, and creosote bush. Joshua tree woodland occupies approximately 95 percent of the SEA.

Corresponding MCV communities:

- *Yucca brevifolia* (Joshua tree woodland) Woodland Alliance

Juniper Woodland: An open woodland dominated by California juniper (*Juniperus californicus*), with an understory that is typical of desert scrub. This community is dominant in a few areas within the SEA, but is usually loosely scattered within the Joshua tree woodland.

Corresponding MCV communities:

- *Juniperus californica* (California juniper woodland) Woodland Alliance

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA includes non-native grasses and "weedy" herbaceous species, native and non-native, including doveweed (*Croton setigerus*), mustards, telegraph weed (*Heterotheca grandiflora*), Russian-thistle (*Salsola tragus*), dock (*Rumex* spp.), yellow star-thistle (*Centaurea solstitialis*), Australian saltbush (*Atriplex semibaccata*), and cocklebur (*Xanthium strumarium*). Disturbed areas occur throughout the SEA around active agriculture and residential developments, along paved roads, dirt access roads, and other similarly disturbed areas.

Corresponding MCV communities:

None at this time.

Wildlife

Wildlife populations within the SEA reflect somewhat lower diversity and abundance for the habitat types present due to the small size of the SEA areas, the homogeneity of the topography and habitat, and influences of edge effect from surrounding agricultural land uses. An assessment of invertebrate populations is made difficult due to the lack of data, but the SEA is sure to include more common species in fair numbers. Amphibian populations are generally scarce in desert communities and no riparian habitat is available within the SEA. Many essential reptilian habitat characteristics such as open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather are present within the SEA. These characteristics, as well as the availability of fallen and decomposing woody material, are likely to support a wide variety of reptilian species. The viviparous desert night lizard (*Xantusia vigilis*) occurs almost exclusively in association with Joshua tree debris and debris of other desert floor yuccas.

The scrubland, woodland, and grassland habitats in the SEA provide foraging and cover habitat for year-round resident and seasonal resident song birds. In addition, the SEA encompasses abundant raptor foraging, perching, and nesting habitat. The combination of these resources provide for a diversity of bird species.

Mammal populations are suggested to also reflect the generally disturbed environs influencing this SEA. Small mammals are expected to be uneven in their diversity with more adaptive species and introduced European species being in high numbers compared to others. Medium sized mammal populations are expected to exhibit the same characteristics. Large mammals are largely absent on a resident basis.

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

Wildlife movement within the SEA is possibly limited to local movement, but large-scale movement across the Antelope Valley floor is probably much facilitated by the Joshua tree habitat as island-like stepping stones. Typically in burned-over areas, animal paths tend to orient toward the Joshua tree

habitat. Birds, and possibly bats, and other aerial organisms that use the migration corridor along the desert side of the San Gabriel Mountains probably use the woodland in the SEA for resting and feeding. Animals foraging within the SEA are unlikely to occur in concentrated numbers due to the heterogeneity of the topography and habitat of the SEA. However, local movement to and from the different SEA areas, as well as to and from the San Gabriel Mountains and the Tehachapi Mountains may be restricted due to the disturbed nature of the Antelope Valley floor. Wildlife movement is likely to converge in areas where movement is still possible, which produces concentrated movement areas or "bottlenecks."

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These include California joint fir scrub, Joshua tree woodland, spiny hop sage scrub, broom snake weed scrub, and bitter bush scrub. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

In addition, CDFG is concerned with the status of California juniper woodland within the Antelope Valley, and this community is therefore considered sensitive within the County.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Peirson's morning-glory (*Calystegia peirsonii*) RPR 4.2
- Clokey's cryptantha (*Cryptantha clokeyi*) RPR 1B.2

- Short joint beavertail (*Opuntia basilaris* var. *brachyclada*) RPR 1B.2

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Tricolored blackbird (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- Ferruginous hawk (*Buteo regalis*) BCC, BLMS, CDFG Watch List, AWL, LAA
- Swainson's hawk (*Buteo swainsoni*) BCC, FSS, ST, USBC, AWL, ABC
- Mountain plover (*Charadrius montanus*) BCC, SSC, USBC, AWL, ABC
- Merlin (*Falco columbarius*) CDFG Watch List
- Prairie falcon (*Falco mexicanus*) BCC, CDFG Watch List, LAA
- American peregrine falcon (*Falco peregrinus anatum*) BCC, FSS, SE, CDF, CDFG Fully Protected, AWL, ABC
- California condor (*Gymnogyps californianus*) FE, SE, CDF, CDFG Fully Protected, USBC, AWL, ABC
- Loggerhead shrike (*Lanius ludovicianus*) BCC, SSC, LAA
- Le Conte's thrasher (*Toxostoma lecontei*) BCC, BLMS, SSC, USBC, AWL, ABC, LAA
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Tehachapi pocket mouse (*Perognathus alticolus inexpectatus*) FSS, SSC
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE JOSHUA TREE WOODLANDS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	Although there are several listed species that occur within the SEA, this criterion is not met due to the lack of known core population areas.

B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA contains large patches of undisturbed Joshua tree woodland habitat, which has become increasingly rare in the region.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	As stated above, Joshua tree woodlands have become rare in the region, and are even more rare in the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The habitat within the SEA has been studied for how it may serve as a concentrated breeding, feeding, resting, or migrating ground for any species. Some cross-desert migratory routes depend, in part, on the cover and habitat of the Joshua tree woodland. The units 1-7 of the SEA on the Antelope Valley floor are in a globally IBA, known as a bird migration route. The Joshua tree woodland is an important component of resources that supports this migration.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	Due to the scarcity of Joshua tree woodland, specimens of the quality found in the SEA are important to science and have become living laboratories. The SEA contains the most westerly extent of this habitat type.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The Joshua tree woodland contained within the SEA is an excellent example of this community type.

In conclusion, the area is an SEA because it contains: B-C) Joshua tree woodland, a rare community both regionally and within the County; D) habitat important to breeding, feeding, and migration; E) the geographic limit of Joshua tree woodland; and F) an excellent undisturbed example of Joshua tree woodland.

Madrona Marsh Preserve SEA

Location

General

The Madrona Marsh Preserve Significant Ecological Area (SEA) lies on the northeast corner of Madrona Avenue and Sepulveda Boulevard, within the City of Torrance. The SEA boundaries encompass the natural part of the Madrona Marsh Preserve, which is a remnant of one of the last natural vernal wetlands in the County. Vernal marshes fill in the rainy season (winter and spring in our area) and dry completely by the end of summer. They are heavily used by migrant birds in the spring, and in the fall if rains are early. They usually have other resident flora and fauna that are specially adapted to the seasonal cycle of wetting and gradual complete dessication.

The SEA is located within the Torrance United States Geological Survey (USGS) 7.5' California Quadrangle.

General Boundary and Resources Description

The SEA boundaries generally follow the Madrona Marsh Preserve boundary, which is surrounded by urban development. The Madrona Marsh Preserve is a park of the City of Torrance that is situated to the west of Maple Avenue, north of West Sepulveda Boulevard, east of Madrona Avenue and directly south of Plaza Del Amo. The Madrona Marsh Nature Center has offices and visitor activities to the north of Plaza Del Amo. The Nature Center supports an active volunteer and educational program for natural areas in this part of the Los Angeles Basin.

The SEA supports one of three remaining freshwater wetlands that once covered much of the southern and western Los Angeles Basin area. In the lowland are vernal marshes and an alkaline margin, and the upland supports a back dune system and vernal pools.

The freshwater plants and animals found here are completely surrounded by residential development and industrial facilities. This type of habitat has been filled, drained, and lost to development throughout most of the County. In some areas, man-made lakes and ponds have created small freshwater marshes along their edges, but this is minimal in comparison to the large expanses of freshwater marsh that were once found in the Los Angeles Basin.

Freshwater marsh habitat supports a great diversity of wildlife. Most of the bird species are dependent in some way on the surface moisture and vegetation, and would not be able to survive without it. It is also a habitat that supports several species of amphibians. Frogs and toads can be found here that are becoming extremely difficult to find throughout Southern California. The marsh is also an important area for migratory birds. Over 150 bird species have been recorded as using Madrona Marsh. Because the remnant freshwater marshes like Madrona Marsh are the only habitat of this type in southern portion of the County, they serve as miniature wildlife refuges. Kenneth Malloy Harbor Regional Park (Harbor Lake Regional Park SEA) and Ballona Freshwater Marsh (Ballona Wetlands CRA) are the two other freshwater marshes in this area. Waterfowl, shorebirds, marsh birds, and others can be found on the marsh in numbers during the spring and fall migration.

Vegetation

The SEA encompasses formations of vernal pool aquatics and emergent species, alkaline marsh and coastal bluff and dune scrub. The vernal pool margins support limited densities of native grasses, but these do not form separate communities and are included within the vernal pool floral matrix. Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

Vernal Marsh: Develops in areas of still or slow-moving freshwater for 6 to 11 months of the year. This community is dominated by the perennial, emergent cattails (*Typha* spp.), which reach a height of four to five meters and often form a closed canopy. Bulrushes (*Schoenoplectus* spp.) are dominant below the cattail canopy. Vernal marsh is relatively uncommon; it occurs in small patches in natural or created sinks with water sources.

Corresponding MCV communities:

- *Phragmites australis* (common reed marshes) Herbaceous Alliance and Semi-Natural Stands

- *Lepidium latifolium* (perennial pepper weed patches) Semi-Natural Herbaceous Stands
- *Eleocharis macrostachya* (pale spike rush marshes) Herbaceous Alliance
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha* (*angustifolia, domingensis, latifolia*) (cattail marshes) Herbaceous Alliance
- *Sarcocornia* [*Salicornia*] *pacifica* (*Salicornia depressa*) (pickleweed mats) Herbaceous Alliance
- *Juncus articus* (var. *balticus*, *mexicanus*) [*Juncus balticus* ssp. *ater, J. mexicanus*] (Baltic and Mexican rush marshes) Herbaceous Alliance
- *Juncus effusus* (soft rush marshes) Herbaceous Alliance
- *Lemna* (*minor*) and relatives (duckweed blooms) Provisional Herbaceous Alliance

Vernal Pool Sites: Occur in several different areas within the SEA where unique sub-surface conditions of shallow layers of less permeable horizons allow for seasonal accumulations of freshwater. True vernal pools, which are rare in Southern California and extremely rare in the County, form seasonally in shallow, closed basins, usually where a lens of heavy clay soil holds surface water following rainfall events.

Corresponding MCV communities:

- *Eleocharis macrostachya* (pale spike rush marshes) Herbaceous Alliance
- *Juncus arcticus* (var. *balticus*, *mexicanus*) [*Juncus balticus* ssp. *ater, J. mexicanus*] (Baltic and Mexican rush marshes) Herbaceous Alliance
- *Juncus* (*oxymeris, xiphioides*) (iris-leaf rush seeps) Provisional Herbaceous Alliance

Alkali Marsh: Found on the margins of the vernal pools and is similar to the freshwater marsh, but with more salt-tolerant hydrophytes present. Species associated with this community include saltgrass (*Distichlis spicata*), mulefat (*Baccharis salicifolia*), alkali mallow (*Malvella leprosa*), toadrush (*Juncus bufonis*), spikeweed (*Centromadia pungens ssp. pungens*), cotton batting (*Gnaphalium stramineum*), and alkali heliotrope (*Heliotropium curassavicum var. oculatum*).

Corresponding MCV communities:

- *Distichlis spicata* (salt grass flats) Herbaceous Alliance
- *Spartina foliosa* (California cordgrass marsh) Herbaceous Alliance
- *Arthrocnemum subterminale* (Parish's glasswort patches) Herbaceous Alliance
- *Atriplex lentiformis* (quailbush scrub) Shrubland Alliance

Coastal Bluff and Dune Scrub: Here is a remnant of the El Segundo Dune System that occupied coastal areas along much of the Santa Monica Bay. The system consists of fine, sandy soil that dries rapidly. Plants typical of the dune scrub include dune buckwheat (*Eriogonum parvifolium*), rattle

pod (*Astragalus trichopodus var. lonchus*), bladderpod (*Peritoma arborea*), deer weed (*Acmispon glaber*), sawtooth goldenbush (*Hazardia aquarrosa*), and California sunflower (*Helianthus californicus*).

Corresponding MCV communities:

- *Baccharis pilularis* (coyote brush scrub) Shrubland Alliance
- *Lupinus arboreus* (yellow bush lupine scrub) Shrubland Alliance and Semi-Natural Shrubland Stands
- *Lupinus chamissonis-Ericameria ericoides* (silver dune lupine–mock heather scrub) Shrubland Alliance

Wildlife

Wildlife diversity and abundance within the SEA is moderate, commensurate with the relative homogeneity of the natural open space habitat types. Wildlife within much of the SEA is comprised of species that typically occur within freshwater marsh and vernal pools. Birds of prey frequently forage over the pools and open grasslands, which form following the seasonal drying of the surface water. The Madrona Marsh vernal pools provide rare surface water habitat for wildlife in an otherwise developed region, and the ponds attract moderate numbers and diversity of migratory waterfowl. A number of local wildlife species are strictly limited to seasonal pool habitats. The vernal pool system in the Madrona Marsh and those in nearby Harbor Lake Regional Park SEA and the Ballona Wetlands freshwater marsh constitute the only local functional ecosystems of this unique type for wildlife species. The Madrona Marsh is the only one of these freshwater wetlands that has the yearly cycle of filling in the spring and complete dessication by late summer.

Analysis of invertebrates on any particular site usually is limited by a lack of specific data, but has sufficient acreage to support healthy populations of whatever invertebrate species are present, which is probably several hundred terrestrial species. The vernal pools, when ponded, form aquatic habitats for a moderately diverse fauna of freshwater arthropods and other invertebrates, including native fairy shrimp, aquatic flies, diving beetles, water scavengers, ostracods, and snails. Amphibians generally are relatively common in the pond. Frogs and toads are frequently seen.

Madrona Marsh, nearby Kenneth Malloy Harbor Regional Park, and Ballona freshwater marsh are the only habitats of this type in the southern portion of the County, and they serve as miniature wildlife refuges for bird species of open fresh water, waterfowl, shorebirds, marsh birds, and others can all be found on the marsh in numbers during the spring and fall migration.

Wildlife Movement

The vernal pools situated within this SEA serve as an isolated, high-quality resource providing habitat linkage for migratory waterfowl. The vernal pools teem with arthropod and amphibian activity, and provide essential feeding grounds for long-distance migrants, as well as for resident species of reptiles, birds and mammals. The ponds do not lie within any identified terrestrial movement routes for wildlife.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by

federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The SEA is configured to encompass regionally significant communities, which include pickleweed mats, California cordgrass marsh, Parish's glasswort patches, silver dune lupine-mock heather scrub, and all vernal pools. These communities or closely related designations are considered highest priority communities by the CDFG, indicating that they are declining in acreage throughout their range due to land use changes. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section. Changes to the classification system in some cases divides plant communities into many possible vegetation alliances communities, not all of which may be considered sensitive. For the purposes here previously listed communities with a least one sensitive alliance in the new format have been listed.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in the California), or .3 (not very endangered in the California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Aphanisma (*Aphanisma blitoides*) RPR 1B.1
- Ventura marsh milk-vetch (*Astragalus pycnostachyus var. lanosissimus*) FE, SE, RPR 1B.1
- Coastal dunes milk-vetch (*Astragalus tener var. titi*) FE, SE, RPR 1B.1
- Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
- South coast saltscale (*Atriplex pacifica*) RPR 1B.2
- Parish's brittlescale (*Atriplex parishii*) RPR 1B.1

- Davidson's saltscale (*Atriplex serenana var. davidsonii*) RPR 1B.2
- Southern tarplant (*Centromadia parryi ssp. australis*) RPR 1B.1
- Orcutt's pincushion (*Chaenactis glabriuscula var. orcuttiana*) RPR 1B.1
- Coastal goosefoot (*Chenopodium littoreum*) RPR 1B.2
- Salt marsh bird's-beak (*Chloropyron maritimum ssp. maritimum*) FE, SE, RPR 1B.2
- Beach spectaclepod (*Dithyrea maritima*) ST, RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*) RPR 1B.1
- Mud nama (*Nama stenocarpum*) RPR 2.2
- Moran's navarretia (*Navarretia fossalis*) FT, RPR 1B.1
- Prostrate vernal pool navarretia (*Navarretia prostrata*) RPR 1B.1
- Coast woolly-heads (*Nemacaulis denudata var. denudata*) RPR 1B.2
- South coast branching phacelia (*Phacelia ramosissima var. austrolitoralis*) RPR 4.2
- Brand's star phacelia (*Phacelia stellaris*) FC, RPR 1B.1
- Ballona cinquefoil (*Potentilla multijuga*) RPR 1A
- Estuary seablite (*Suaeda esteroa*) RPR 1B.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- California Orcutt grass (*Orcuttia californica*) FE, SE, RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Mimic tryonia (*Tryonia imitator*) CDFG Special Animals List
- Belkin's dune tabanid fly (*Brennania belkini*) CDFG Special Animals List
- Busck's gallmoth (*Carolella busckana*) CDFG Special Animals List
- Sandy beach tiger beetle (*Cicindela hirticollis gravida*) CDFG Special Animals List
- Western beach tiger beetle (*Cicindela latesignata latesignata*) CDFG Special Animals List
- Senile tiger beetle (*Cicindela senilis frosti*) CDFG Special Animals List
- Globose dune beetle (*Coelus globosus*) CDFG Special Animals List

- Henne's eucosman moth (*Eucosma hennei*) CDFG Special Animals List
- El Segundo blue butterfly (*Euphilotes battoides allyni*) FE, Xerces: Critical
- Lange's El Segundo Dune weevil (*Onychobaris langei*) CDFG Special Animals List
- Wandering skipper (*Panoquina errans*) CDFG Special Animals List
- El Segundo flower-loving fly (*Rhaphiomidas terminatus terminatus*) CDFG Special Animals List
- Dorothy's El Segundo Dune weevil (*Trigonoscuta dorothea dorothea*) CDFG Special Animals List
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Tricolored blackbird (*nesting colony*) (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, BCC, SSC, ABC, AWL, USBC
- California black rail (*Laterallus jamaicensis coturniculus*) BCC, ST, CDFG Fully Protected, USBC, AWL, ABC (*all listings include full species*)
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) SE
- California least tern (*Sternula antillarum browni*) FE, SE, CDFG Fully Protected, USBC, ABC (*both listings include full species*)
- South coast marsh vole (*Microtus californicus stephensi*) SSC
- Pacific pocket mouse (*Perognathus longimembris pacificus*) FE, SSC
- Southern California saltmarsh shrew (*Sorex ornatus salicornicus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

Criteria Analysis of the Madrona Marsh Preserve SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	Not met, although the Madrona Marsh contains vernal pools, which may harbor threatened and endangered species in a unique location for the County.

B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Madrona Marsh is one of three remaining wetlands with freshwater marsh in the County. (The others are Kenneth Malloy Harbor Regional Park and the Ballona Wetlands freshwater marsh.) This type of habitat once covered the South Bay area of the Los Angeles Basin, and supports several species of amphibians and vernal pools that are becoming rare throughout Southern California.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	Madrona Marsh is one of three remaining wetlands with freshwater marsh in the County. This type of habitat once covered the South Bay area, and supports several species of amphibians including frogs and toads that are becoming rare throughout Southern California. In addition it has some vernal pools, which are very rare in the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	Any natural wetland like the Madrona Marsh is an important area for amphibians, which need water for their aquatic larvae to complete their life cycle. The Marsh is very important for migratory birds as a waypoint during the spring and fall migration periods.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	Because the Madrona Marsh is one of only three remnants of the formerly extensive habitat, there is much interest in the local community and at academic and scientific institutions in preserving the area and acquiring adjacent habitat currently used for gas and oil extraction that can be restored to marsh habitat.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The Madrona Marsh is a remnant of the freshwater marsh once prevalent in this area of the County, and it is important to recognize protection of the habitat.

In conclusion, the area is an SEA because it contains: B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; E) unique habitat that is of scientific and educational value; and F) a very rare habitat of vernal marsh that has retained its unique yearly cycle.

Palos Verdes Peninsula and Coastline SEA

Location

General

The Palos Verdes Peninsula and Coastline Significant Ecological Area (SEA) is chiefly located offshore around the Palos Verdes Peninsula, but also includes terrestrial habitat in Portuguese Bend and several other disjunct drainages and ridgelines. All of the many offshore rocks within 12 nautical miles of the coast are part of the California Coastal National Monument that managed by the Bureau

of Land Management in the U.S. Department of the Interior. Many endangered marine mammals use this habitat. The SEA includes the inshore part of the Point Vicente State Marine Conservation Area (SMCA) and the Abalone Cove SMCA. Most of the interior Peninsula canyons and slopes are critical habitat for the federally-threatened coastal California gnatcatcher (*Polioptila californica californica*). Many of the interior areas are also critical habitat for the federally-endangered Palos Verde blue butterfly (*Glaucopsyche lygdamus palosverdesensis*). The gnatcatcher favors the coastal sage scrub or chaparral vegetation; the butterfly favors flatter areas with grassland plants of the upper marine terraces, such as Ventura milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*), which is a principal food plant for its larvae. The gnatcatcher critical habitat covers virtually all of the terrestrial part of the SEA and extends well beyond the SEA on the Peninsula. The butterfly's critical habitat is chiefly in flatter areas of the marine terraces, but can include broader areas of the canyons.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Torrance, San Pedro, and Redondo Beach

General Boundary and Resources Description

Most of the SEA is in the nearshore marine habitat and extends from the high tide line of the beach to about one mile offshore. The designated SEA traverses along the coastline of the Palos Verdes Peninsula from Flat Rock Point at the northern end of Bluff Cove to the west end of the breakwater of Los Angeles Outer Harbor. The terrestrial part of the SEA includes several non-contiguous ravines, canyons and streambeds that are adjacent to rural residential areas. The area known as Portuguese Bend is one of the largest inland areas within the SEA.

The SEA has the inshore part of the Point Vicente SMCA, which extends from mean high tide due east-west to three nautical miles offshore. The Point Vicente SMCA is like a reserve in that no take of any kind is permitted. The western line goes due east-west off an unnamed point about a 0.4 mile north of Point Vicente. The eastern line goes due north-south off Long Point. Adjacent is the Abalone Cove SMCA, which extends from mean high tide to 3 nautical miles offshore, also due north-south. The eastern boundary of the Abalone Cove SMCA extends off Portuguese Point.

Disjunct interior parts of the SEA include: 1) Agua Amarga Canyon, which drains to Lunada Bay (critical habitat for both the Palos Verdes blue butterfly and the coastal California gnatcatcher; 2) an area of coastal sage scrub and bluffs north of Point Vicente; 3) the upper bluff area of chaparral and grassland that is on the northeast side of Pacific Coast Highway at Point Vicente; 4) the beach and cliff area south of Pacific Coast Highway at Abalone Cove, Portuguese Point, Inspiration Point and Portuguese Bend; (5) the unbuildable areas of the Portuguese Bend Landslide, which include grassland, chaparral, and canyons and surround the community of Portuguese Bend on the north side of Pacific Coast Highway, and border the southern side of the community of Rolling Hills; 6) cliffs and headland areas with coastal bluff, coastal chaparral, and grassland extending from the east side of Portuguese Bend to the City of Los Angeles border at the west end of Royal Palms Beach Park; 7) a lobe bordering the switchbacks of Palos Verdes Drive East that connects to the coast and covers the natural cliff, bluff, and chaparral vegetation up to about one mile inland; and 8) the intertidal area on the west side of Point Fermin.

The other disjunct interior parts of the SEA are within the community of Rolling Hills, with numerous natural parts of the canyons and ridges have been too steep to develop. These are designated as part of the SEA because the native vegetation is essential for the native birds and the migrants, which include those that use the Palos Verdes Peninsula as a rest stop and those that overwinter. They include the following canyons, which are on the north side of the Palos Verdes Range crest,

and drain to the Los Angeles Basin: 9) Agua Negra Canyon on the west side of Crenshaw Avenue; 10) Agua Magna Canyon; 11) Sepulveda Canyon; 12) Blackwater Canyon, including two upland forks; and 13) George F. Canyon with all three upland forks.

Finally, the remaining disjunct interior parts of the SEA are in the Miraleste district of Rancho Palos Verdes, on the east side of Palos Verdes Drive East, naturally-vegetated canyons trend eastward to the flat area of San Pedro: 14) north of Rockinghorse Road; 15) north of Colt Road; 16) north of Coral Ridge Road; 17) Miraleste Canyon (north of Miraleste Road); and 18) two branches of San Pedro Canyon (south of Via Siena and north of Via Colinta).

The SEA is formed by the Palos Verdes Range, and is characterized by marine terraces atop rough terrain that is created by the erosion of the upland areas into many canyons. The flatter areas on the marine terraces are the areas that have been developed. Unparalleled headlands, rocky shoreline, and the land-sea interface provide for a tremendous variety of biotic resources in this area. It is one of the most biologically diverse and productive regions in the County, and contains several biotic communities, including rocky intertidal, kelp bed, coastal strand, and coastal sage scrub. One small sandy beach is periodically present on an ephemeral basis at Portuguese Bend. This 10 mile stretch of coastline, between Point Fermin and Bluff Cove, is the only sizeable rocky intertidal area in the County.

The Peninsula was once an island before sediments filled the Los Angeles Basin, and it has many biological associations today that originated during the time it was insular. A number of the uncommon plants, for example, are also only known from offshore islands, and some of the bird subspecies on the Peninsula are also only known elsewhere on the offshore islands. They are not found on the mainland except on the Palos Verdes Peninsula.

Rocky shores support a great number of species. This is primarily due to the interface of the ocean and the land, the highly diverse natural communities that both contain, and the oxygen and food-rich environment offered by this habitat. The natural features include a variety of substrates, both stable and unstable, the aeration of water and humidification of the air through wave splash, and the upwelling of nutrient-rich waters along the Southern California coast.

Subtidally, one can find representatives of every phylum of animals (major groupings, such as mollusks, echinoderms, jellyfish, etc.), many of which are not represented on land. Rocky substrates are as diverse as the intertidal areas. Sandy subtidal areas also support a great variety of species, but most are cryptic and submerge into the depths of the sand because of the high energy and unstable nature of their environment.

Kelp beds dominated by giant kelp (*Macrocystis pyrifera*) are an extremely productive habitat that provides food, attachment sites, and shelter for a diverse community of invertebrates, fishes, and sea mammals. They are an important nursery habitat for juvenile fishes. Kelp beds were originally common off the Southern California coast wherever rocks were present at shallow depths. However, due to man-made and natural phenomena, this habitat has been severely diminished in the region, and is now rare in the County. A kelp bed habitat restoration program was begun in the area in the 1960s, and appears to have been successful. Kelp has been reestablished west of Point Fermin, along Abalone Cove, and offshore of Halfway Point. Smaller colonies are now reestablishing at other locations offshore of the southern coast of the Peninsula.

The coastal cliffs found in the area range in elevation from 100 to 300 feet and support coastal sage scrub and coastal strand bluff scrub. These and offshore rocks offer ideal roosting and feeding sites for numerous shorebirds, gulls, and other seabirds, including the fully-protected California brown pelican (*Pelecanus occidentalis californicus*). The area is an important stop for migrating birds as they fly along

the coast or across the Santa Monica Bay. In addition, the bluff tops that are now abandoned agricultural fields are utilized by many species as wintering feeding grounds. One fully-protected species, the American peregrine falcon (*Falco peregrinus anatum*), and one very uncommon species of conservation concern, the prairie falcon (*F. mexicanus*), have been known to winter here in recent years.

The bluff tops and cliffs have been disturbed by pedestrian use, residential development, and agriculture. Only very small, isolated ravines remain in a natural state. The shoreline has suffered major biological impairment, commonly blamed on over-collection by humans and intense pollution. The health of the marine environment has been relatively poor due to human influences, such as outfalls with toxic contents, but appears to be slowly recovering.

Vegetation

Vegetation within the SEA is comprised of several terrestrial plant community types whose makeup is strongly influenced by the marine weather conditions. Coastal sage chaparral scrub occurs on the slopes, and southern willow scrub areas occur in the drainages of several isolated ravines distributed over the top of the peninsula. The immediate coast and cliffs support coastal dune and bluff scrub and coastal sage chaparral scrub. The abandoned agricultural fields and other disturbed areas that have become non-native grasslands provide raptor foraging areas with their populations of native reptiles and mammals.

Agua Amarga Canyon is the last remaining relatively undisturbed drainage on the coastal side of the Palos Verdes Peninsula. The SEA area is protected as a part of the Palos Verdes Peninsula Land Conservancy Preserves. Because of irrigation runoff, Agua Amarga has nearly perennial water. The canyon of Agua Amarga at Lunada Bay is quite spectacular, but not included in the SEA due to development on the coastal bluff adjacent to the descent to the beach. The main canyon has a complex of coastal sage scrub, chaparral, and riparian communities. Three forms of birds resident on the Peninsula that reside in Agua Amarga are insular forms of common birds: the dusky orange-crowned warbler (Vermivora celata ssp. sordida), the Channel Islands flycatcher (*Empidonax difficilis insulicola*, race of the western flycatcher), and Allen's hummingbird (*Selasphorus sasin sedentarius*). The dusky orange-crowned warbler is quite remarkable in that unlike other subspecies of the orange-crowned warbler, it is not a long-distance migrant. The federally-threatened coastal California gnatcatcher is also a resident in this canyon, and has critical habitat extending to the edge of the marine terrace bluff at the coast. Additionally, the canyon is critical habitat for the Palos Verdes blue butterfly. Vegetation also has insular forms. For example, the Catalina Island cherry (*Prunus ilicifolia* ssp. *lyonii*) and the southern island mallow (*Lavatera assurgentiflora* ssp. *glabra*) occur in the canyon. These animals and plants probably occur in all or many of the other terrestrial parts of the SEA as well.

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species and plant communities occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

<u>Coastal Bluff and Dune Scrub</u>: Found close to the ocean where the substrate consists of fine, sandy soil that dries rapidly. In the SEA, it is limited to small sections of coastal strand and bluffs. Plants typical of the dune scrub include dune buckwheat (*Eriogonum parvifolium*), rattle pod (*Astragalus*

trichopodus var. *lonchus*), bladderpod (*Peritoma arborea*), deer weed (*Acmispon glaber*), sawtooth goldenbush (*Hazardia aquarrosa*), and California sunflower (*Helianthus californicus*).

Corresponding MCV communities:

- *Baccharis pilularis* (coyote brush scrub) Shrubland Alliance
- *Lupinus arboreus* (yellow bush lupine scrub) Shrubland Alliance and Semi-Natural Shrubland Stands
- *Lupinus chamissonis-Ericameria ericoides* (silver dune lupine–mock heather scrub) Shrubland Alliance

Coastal Sage Chaparral Scrub: Consists of drought-deciduous, low, soft-leafed shrubs and herbs on gentle to steep slopes below 1,500 feet in elevation. This community is dominated by California sagebrush (*Artemisia californica*), California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and California brittle bush (*Encelia californica*). Coastal sage scrub is distributed throughout the SEA on the slopes of the isolated areas inland from the coast and on the coastal cliffs.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Diplacus* [*Mimulus*] *aurantiacus* (bush monkeyflower scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum cinereum* (ashy buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Hazardia squarrosa* (sawtooth golden bush scrub) Shrubland Alliance
- *Isocoma menziesii* (Menzie's golden bush scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Lupinus albifrons* (silver bush lupine scrub) Shrubland Alliance

Southern Willow Scrub: A riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets occurring within and adjacent to watercourses. The dominant species of this community within the SEA are willows (*Salix* spp.), with lesser amounts of mulefat (*Baccharis salicifolia*). This community occurs in segments along portions of the drainages and streambeds of

isolated sites inland from the shoreline.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix gooddingii* (black willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Non-Native Grassland: Consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include wild oat (*Avena fatua*), slender oat (*Avena barbata*), red brome (*Bromus madritensis* ssp. *rubens*), ripgut brome (*Bromus diandrus*), and herbs, such as black mustard (*Brassica nigra*) and wild radish (*Raphanus raphanistrum*). Non-native grasslands are located in small to large patches throughout the SEA in previously disturbed areas, former agricultural and cattle pastures.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus, barbatus*) ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Lolium perenne* [*Festuca perennis*] (perennial rye grass fields) Semi-Natural Herbaceous Stands

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA includes non-native grasses and a high proportion of weedy species, including black mustard and thistle species. Several disturbed areas are scattered throughout the SEA.

Corresponding MCV communities:

No corresponding MCV communities at this time

Intertidal and Subtidal Algal Habitats: Common in tidepools and on rocky subtidal substrate down to the macro-alga photosynthetic depth, which varies with water turbidity that is characteristic of the region. This habitat has representatives from all the phyla of algae, and it has not been characterized in the MCV manner. A common large brown alga observed at the tidepools of Point Fermin is feather-boa kelp (*Egregia menziesii*).

Community dominant plant:

- Feather-boa kelp (*Egregia menziesii*)

Surfgrass and Eelgrass Habitats: Characterized by two flowering plants that resemble grass and form dense beds on different substrates and in different conditions. Both types form highly

productive habitats for unique assemblages of marine species. NOAA Fisheries and the CDFG consider surfgrass and eelgrass as valuable habitats that should be protected. Surfgrass occurs from Mean Lower Low Water (MLLW) to about 25 foot depth on rocky substrate. Locations known to support substantial surfgrass beds include rocky points and rocky subtidal areas of canyons all along the northern border of the SEA. Eelgrass grows on soft substrate and typically occurs in bays. A form of eelgrass (thought to be *Zostera pacifica)* is found on open coast sand bottom. Eelgrass is an important habitat that supports a community of diverse species from sessile to mobile invertebrates and certain fishes, such as pipefish.

Community dominant plant:

- *Phyllospadix scouleri*, or Scouler's surf grass and *P. torrey* or Torrey's surfgrass
- *Zostera pacifica* (eelgrass)

Kelp Forest Habitat Giant Kelp Beds: Can form to a depth of approximately 99 feet in the ocean. The kelp beds are part of a productive habitat that provide food, attachment sites and shelter for invertebrates and fishes. Giant kelp, the dominant alga of this community, is the fastest lengthening organism known, and it really thrives in nutrient-enriched waters of upwelling. It has been "clocked" at two feet per day extension of its stipe and blades. The kelp beds are an important nursery habitat and recruitment area for juvenile fishes and invertebrates. The Fisheries National Oceanographic and Atmospheric Administration (NOAA) Fisheries, as well as the CDFG consider kelp beds as sensitive.

Community dominant plant:

- Macrocystis pyrifera (giant kelp)

Marine Resources

The Palos Verdes coastline is a region where the upwelling of nutrient-rich waters offers a variety of habitats that supports highly productive and extremely diverse marine and coastal communities. Man-made disturbances have seriously diminished the quality and extent of unaffected marine habitats. Today, the SEA possesses limited areas of kelp bed habitats. A kelp bed restoration program begun in the 1960s has apparently succeeded in these areas, and kelp has been reestablished off Point Fermin, in Abalone Cove and offshore of Halfway Point.

Intertidal Zone Habitats: Consist of a variety of coastal habitats periodically covered and uncovered by waves and tides. The rocky shores support a rich assortment of plants and animals including green, brown and red algae. A wide variety of invertebrates compete for space with the plants in this habitat. Mobile invertebrates, such as crabs and snails can be found in great abundance. Fishes are limited to tidepools during high tide, while shorebirds actively forage during low tide. The black abalone (*Haliotis cracherodii*) is a federally-endangered species and critically endangered species of the International Union for Conservation of Nature–Red List (IUCN). At one time, the black abalone was plentiful in the rocky intertidal and nearshore rocky subtidal areas in the SEA down to about 20 feet depth. Whether it still exists in the SEA is unknown, because its current occurrences are widely scattered and much reduced by overfishing and wasting disease.

Nearshore Subtidal Habitat: Includes those marine habitats ranging from the lower level of the intertidal zone to 99 feet. This region supports a variety of assemblages of invertebrates and fishes, and along the coastline of the SEA this habitat is dominated by giant kelp.

Kelp Forest Habitat: Kelp beds dominated by giant kelp are found in some locations in the area. These have tremendous value to the biota of nearshore areas. Where they occur, they may locally account for 90% of the biomass, providing structure and structural complexity for their community from the rocky base through the water column to the surface. Giant kelp is the fastest lengthening organism known, and it thrives in nutrient-enriched waters of upwelling. The giant kelp provides food and habitat for hundreds of species and all the phyla. The kelp beds are an important nursery habitat and recruitment area for juvenile fishes and invertebrates. Many of the species that this habitat supports are the basic components of the food chains of nearshore fishes. Kelp beds are also important because they reduce wave shock to shorelines. This protection helps maintain the abundance and complexity of the marine life found there.

Marine Habitat: Has the greatest diversity of wildlife, with representatives from nearly all the phyla (major groupings of animals, such as jellyfish, mollusks, echinoderms, etc.) and all parts of the food web (trophic levels) for several communities. Many of the marine phyla do not have terrestrial representatives. Some of the vertebrates, such as gray whales, and the plankton use the area as a migratory corridor. The major vegetation communities, each with its own great diversity and all trophic levels, are the benthic algae of rocky substrates, the kelp beds based on giant kelp holding onto rocky subtidal substrate and extending into the water column, and the planktonic, which are based on photosynthesizers that are microscopic and are throughout the water column in photosynthetic depths.

Wildlife

The wildlife found in the SEA is dependent upon the two basic regimes: marine and terrestrial. The shoreline and bluffs that overlook the coastal sections are homes and migratory rest areas for a wide variety of birds and marine life. The interior grasslands and ravines have a very different assemblage than the coast. Some of the SEA areas are separate and isolated from one another and probably suffer from the effects of the fragmentation of a larger, more contiguous ecosystem, and exhibiting a reduced number of species from what might be expected.

The mountainous Palos Verdes Peninsula juts out into the Pacific Ocean, relative to developed coastline to the north and south and offers many undisturbed habitats for marine and shorebirds. These and offshore rocks offer ideal roosting and feeding sites for numerous birds that affiliated with the coastline. The area is an important stop for migrating birds as they fly along the coast or across the Santa Monica Bay. In addition, the bluff tops and marine terraces, which are now either residences or abandoned agricultural fields, are utilized by many species in winter as feeding grounds. One fully protected species, the American peregrine falcon, and one uncommon species of conservation concern, the prairie falcon, have been known to winter here in recent years.

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The SEA is on the Pacific Flyway migration route, which is used by many birds seasonally and plays an important role as a stopover because of its extensive undisturbed marine resources. It does not fall within any identified terrestrial movement routes for wildlife because it is isolated by the ocean on one side, and enclosed by miles of developed land on the remaining terrestrial sides.

The offshore major part of the SEA is on the annual migration route of the California gray whale (*Eschrichtius robustus*), which is a Convention on International Trade in Endangered Species (CITES) Appendix I animal. This means that they have endangered status, and no trade or harvest is permitted, except by strictly controlled export and import permits that are issued in countries that are party to the convention and have legislation of adoption, which includes the U.S. The gray whale migrates close to shore on its transit during the winter months, from the Bering Sea to lagoons of Baja California for calving and breeding. A whale count station is manned by volunteers at the Point Vicente Park and Interpretive Center that has yearly records, starting in 1979. The whales generally return north offshore. The area may be a migration corridor for other marine animals, as this is part of the great Southern California Bight, which has an eddy circling counterclockwise to the north off the southward flow of the California Current. This flow brings marine organisms (fishes, invertebrates, and plants) that may have major population concentrations in the south to this part of the ocean habitat. Most of these organisms have a planktonic stage that is dependent on the current system to maintain their populations and distribution. Pollution of the ocean waters by development on land will have significant effects that may not be appreciated immediately because of the cryptic nature of subtidal animals and plants.

Other Cites Appendix I mammals have been recorded as using the SEA in the Point Vicente records including: sperm whales (*Physeter macrocephalus*), minke whales (*Balaenoptera acutorostrata*), humpback whales (*Megaptera novaeangliae*), blue whales (*Balaenoptera musculus*), fin whales (*Balaenoptera physalus*), and southern sea otters (*Enhydra lutris nereis*).

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The terrestrial parts of this SEA are virtually all critical habitat for the coastal California gnatcatcher. Many of the broader canyons and marine terrace bluff areas are also critical habitat for the Palos Verdes blue butterfly.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include silver dune lupine–mock heather scrub, California brittle bush scrub, bush monkeyflower scrub, ashy buckwheat scrub, Menzie's golden bush scrub, and black willow thickets, which occur in the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section. Changes to the classification system mentioned earlier, in some cases divide plant communities into many possible

vegetation alliances, not all of which may be considered sensitive. For the purposes here previously listed communities with at least one sensitive alliance in the new format have been listed.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Aphanisma (*Aphanisma blitoides*) RPR 1B.1
- Ventura marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*) FE, SE, RPR 1B.1
- Coastal dunes milk-vetch (*Astragalus tener* var. *titi*) FE, SE, RPR 1B.1
- Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
- South Coast saltscale (*Atriplex pacifica*) RPR 1B.2
- Parish's brittlescale (*Atriplex parishii*) RPR 1B.1
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) RPR 1B.2
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*) RPR 1B.1
- Coastal goosefoot (*Chenopodium littoreum*) RPR 1B.2
- Catalina crossosoma (*Crossosoma californicum*) RPR 1B.2
- Beach spectaclepod (*Dithyrea maritima*) ST, RPR 1B.1
- Many-stemmed dudleya (*Dudleya multicaulis*) RPR 1B.2
- Island green dudleya (*Dudleya virens* ssp. *insularis*) RPR 1B.2
- Southern island mallow (*Lavatera assurgentiflora* ssp. *glabra*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- Santa Catalina Island desert-thorn (*Lycium brevipes* var. *hassei*) RPR 1B.1
- Coast woolly-heads (*Nemacaulis denudata* var. *denudata*) RPR 1B.2

- South coast branching phacelia (*Phacelia ramosissima* var. *austrolitoralis*) RPR 4.2
- Brand's star phacelia (*Phacelia stellaris*) FC, RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Belkin's dune tabanid fly (*Brennania belkini*) CDFG Special Animals List
- Busck's gallmoth (*Carolella busckana*) CDFG Special Animals List
- Sandy beach tiger beetle (*Cicindela hirticollis gravida*) CDFG Special Animals List
- Western beach tiger beetle (*Cicindela latesignata latesignata*) CDFG Special Animals List
- Senile tiger beetle (*Cicindela senilis frosti*) CDFG Special Animals List
- Globose dune beetle (*Coelus globosus*) CDFG Special Animals List
- Monarch butterfly (*Danaus plexippus*) CDFG Special Animals List
- Henne's eucosman moth (*Eucosma hennei*) CDFG Special Animals List
- El Segundo blue butterfly (*Euphilotes battoides allyni*) FE, Xerces: Critical
- Palos Verdes blue butterfly (*Glaucopsyche lygdamus palosverdesensis*) FE, Xerces: Critical
- Lange's El Segundo Dune weevil (*Onychobaris langei*) CDFG Special Animals List
- Wandering skipper (*Panoquina errans*) CDFG Special Animals List
- Dorothy's El Segundo Dune weevil (*Trigonoscuta dorothea dorothea*) CDFG Special Animals List
- Black abalone (*Haliotis cracherodii*) FE
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, BCC, SSC, ABC, AWL, USBC
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- California black rail (*Laterallus jamaicensis coturniculus*) BCC, ST, CDFG Fully Protected, USBC, AWL, ABC
- California brown pelican (*Pelecanus occidentalis californicus*) FE, SE

- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- California least tern (*Sternula antillarum browni*) FE, SE, CDFG Fully Protected, USBC, ABC
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- Pacific pocket mouse (*Perognathus longimembris pacificus*) FE, SSC
- American badger (*Taxidea taxus*) SSC
- Minke whale (*Balaenoptera acutorostrata*) CITES Appendix I, IUCN least concern
- Blue whale (*Balaenoptera musculus*) CITES Appendix I, IUCN endangered
- Fin whale (*Balaenoptera physalus*) CITES Appendix I, IUCN endangered
- Southern sea otter (*Enhydra lutris nereis*) CITES Appendix I, IUCN endangered
- California gray whale (*Eschrichtius robustus*) CITES Appendix I, FE, IUCN critically endangered
- Humpback whale (*Megaptera novaeangliae*) CITES Appendix I, IUCN least concern
- Northern elephant seal (*Mirounga angustirostris*) CDFG Fully protected
- Sperm whale (*Physeter macrocephalus*) CITES Appendix I, IUCN vulnerable

The Palos Verdes blue butterfly is found in only within the County. The El Segundo blue butterfly is listed as federally-endangered and is currently known from a few areas on the Peninsula. Additional suitable habitat is found in the SEA, and the hope is that the one population can expand. The federally-threatened coastal California gnatcatcher occurs in the coastal sage scrub of the Peninsula, both in and outside of the SEA. The California least tern feeds in the near offshore areas, may visit the beaches, and may rest on the cliff and headland areas in the SEA. In addition, the silvery legless lizard and coast horned lizard, both state species of special concern, have the potential to occur in the SEA.

Regional Biological Value

The SEA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE PALOS VERDES PENINSULA AND COASTLINE SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The Palos Verdes Peninsula is the western-most area of breeding for the threatened coastal California gnatcatcher. The headlands and rocky shoreline provide wintering habitat for two important birds: the fully protected California brown pelican and the state-fully protected American peregrine falcon. The canyons of the SEA support three races of birds that are residents only on the Peninsula and the Channel Islands: insular forms of the orange-crowned warbler, western flycatcher, and Allen's hummingbird. Rare plants, such as southern island mallow t, make this area a very special mainland population for species that otherwise occur only on the offshore islands. Island green dudleya, a rare bluff plant known only from Palos Verdes Peninsula, Santa Catalina Island, and San Nicolas Island, occurs in the Portuguese Bend Landslide.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Unparalleled headlands, rocky shoreline, and the land-sea interface provide for a tremendous variety of biotic resources in the coastline area. Rocky shores support a great number of species, and the upwelling of deep waters provides nutrient-rich waters for the area's kelp beds, which are dominated by giant kelp. Kelp beds were formerly common off the Southern California coast wherever rocks were present at shallow depths. However, due to man-made and natural phenomena, this habitat has been severely diminished in the region. The mainland SEA areas contain mainland populations of species that occur chiefly on the offshore Channel Islands. Any population characteristic of an island is of extremely restricted regional distribution.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	Kelp beds are now rare in the County. These algal communities can account for 90% of the biomass where they occur, and provide food and habitat for hundreds of species. Like terrestrial forests, they moderate the microclimate, reduce wave shock to shorelines and provide shade and shelter to their myriad denizens. The coastal cliffs support coastal sage and coastal strand vegetation, which are rare in Los Angeles because of the scarcity of rocky headlands. The Peninsula's former island status and current maintenance of mainland populations of species that occur chiefly on the offshore Channel Islands are very special. Any population characteristic of an island is of extremely restricted distribution in the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The coastal cliffs provide ideal roosting and feeding sites for numerous shorebirds, gulls, and other seabirds, including the fully-protected California brown pelican. This headland is a principal rest-stop for migrating terrestrial and marine birds on the Pacific Flyway and a wintering area for some migrants. Bluff tops and marine terraces of abandoned agricultural fields are utilized by

			many species as winter feeding grounds. The Palos Verde Peninsula is the western-most area of breeding for the federally-threatened coastal California gnatcatcher. It has numerous plant and animal species that only occur here and otherwise on the offshore islands, so this is a special area for all phases of their life cycles. The marine area is an important migration area for all of the sealife and marine mammals.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	Much scientific and educational work has been done on this part of the coastline. State and county agencies have generated a great deal of information about the area. The Peninsula was once an island and has biotic characteristics more like the offshore Channel Islands than the rest of the County. It is an anomaly of an island now attached to the mainland, and thus interesting for biogeographic studies. The Peninsula canyons are the western-most area of breeding coastal California gnatcatchers. Because of the resident birds and plants that occur only on the Palos Verdes Peninsula and the Channel Islands, this area is of scientific interest for study of island biogeography and evolutionary ecology.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	As the only extensive (10 miles long) rocky intertidal shoreline in the County, the coastline is an important area for preserving its intense biodiversity. It has headlands, rocky shoreline cliffs, rocky intertidal areas, boulder field intertidal areas, kelp beds, coastal strand, ephemeral coastal strand, and coastal sage scrub. The bluffs have a special array of plants found nowhere else on the County mainland. The Peninsula has diverse communities typical of the offshore Channel Islands including coastal sage scrub (which is used by the mainland threatened bird, coastal California gnatcatcher), chaparral, and riparian habitats. The SEA canyons are the least disturbed coastal drainages of the County.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Puente Hills SEA

Location

General

The Puente Hills Significant Ecological Area (SEA) is located in the Puente Hills in the southeastern portion of the County. The Puente Hills are an inland topographical feature that separates the San

Gabriel Valley to the north and the coastal plain to the south. The hills are oriented east-west and stretch from the San Gabriel River on the west approximately to the San Bernardino-Los Angeles County line to the east, where they transition into the Chino Hills. The SEA includes portions of the Whittier Narrows Dam Recreation Area and Flood Control Basin, and much of the undeveloped land throughout the Puente Hills. Nearly the entire SEA is designated as the Puente-Chino Hills State Important Bird Area (IBA) by California Audubon. The main area hosts migrating and resident birds that use the extensive mosaic of lowland terrestrial habitats, and notable extensive areas of grassland and oak and walnut woodlands. This IBA extends well beyond the SEA into Orange and San Bernardino counties, and in general, goes beyond the SEA boundaries in most places. The northwestern disjunct area of the SEA is part of the Los Angeles Flood Control Basin IBA, which hosts many resident and migrating birds that use the wetlands. This IBA extends beyond the SEA on both the Rio Hondo and a long distance upstream along the San Gabriel River.

The SEA encompasses portions of the El Monte, Baldwin Park, Whittier, La Habra and Yorba Linda United States Geological Survey (USGS) 7.5' California Quadrangles. The majority of this SEA lies within unincorporated area of the County.

General Boundary and Resources Description

In the westernmost part of the SEA, boundaries encompass the undeveloped portions of the Montebello Hills. The oil field and transmission lines that occupy this area have protectively-fenced and left most of the coastal sage scrub, which is inhabited by the largest population of the federally-threatened coastal California gnatcatcher (*Polioptila californica californica*) in the County. This area is part of critical habitat for the gnatcatcher. Boundaries of critical habitat extend to Montebello Boulevard on the north side and to the west side of San Gabriel Boulevard, while the SEA boundary stops at the transmission lines' southern edge. Some of the canyons in the oil field have oak woodland.

The SEA has a finger that extends from the Montebello Hills section over San Gabriel Boulevard to the oak woodland (among oil field structures) that borders the Rio Hondo Channel. The SEA finger continues upstream along the natural riparian course of the Rio Hondo to a point where the Rio Hondo is encased as a concrete flood control channel. This area of the Rio Hondo usually has water and is on the migration route for migrating and wintering waterfowl. The riparian area of the Rio Hondo immediately north of San Gabriel Boulevard has long been recognized as important to birds and has been called "Bosque Del Rio Hondo" since Spanish occupation of this area. Abundance of birdlife is frequently mentioned, but the area also has amphibians, reptiles, mammals, and probably fishes.

It is intended that the SEA encompass only natural areas of the basin and portions of the San Gabriel River and Rio Hondo, and the SEA in this area is disjunct from the rest of the Puente Hills. A golf course that is part of the Whittier Narrows Dam County Recreation Area is on the west side of Rio Hondo, and the golf course is not included in the SEA. Likewise, the manicured areas of the County Recreation Area on the east side of Rio Hondo are not included.

Moving east, the southern boundary of the SEA follows the upstream edge of the Whittier Narrows Dam, while the northern boundary goes east along the south side of Durfee Avenue from the east bank of the Rio Hondo. This captures the Flood Control Basin at the confluence of the San Gabriel River and Rio Hondo. The pool at the base of the Whittier Narrows Dam, which often has migrant waterfowl, is included in the SEA. In the Flood Control Basin the connective channel between the Rio Hondo and the San Gabriel River has native riparian vegetation and usually has water. The

connective channel is included in both the SEA and the critical habitat for the coastal California gnatcatcher. The northern SEA boundary follows the south side of Durfee Avenue eastward to near the junction with Peck Road. Here the northern SEA boundary follows the northern side of the grounds of the Whittier Narrows Nature Center to the San Gabriel River, which is naturally vegetated with a soft bottom. The southern SEA boundary has outlined the natural vegetation of the flood control basin and connective channel, with a finger extending south downstream along natural riparian vegetation in the San Gabriel River, to the crossing of San Gabriel Boulevard. Across from the Whittier Narrows Nature Center, the southern boundary is along the southeast side of the San Gabriel River. A finger of the SEA extends upstream along the area of the San Gabriel River, which has soft-bottom and native riparian vegetation upstream about one mile (three-quarters of a mile beyond the crossing of State Route-60, which is a short distance upstream from the Whittier Narrows Nature Center area). This includes the confluence with San Jose Creek that drains the south side of the San Jose Hills, and the north side of the Puente Hills. Currently, the Whittier Narrows area of the SEA outlined above is not physically connected to the remainder of the SEA due to urban development on both sides of Interstate-605.

Much of San Jose Creek is channelized, and the City of Industry is located in the flood plain. Because of this, most wildlife movement cannot use the main watercourse route, which makes Puente Hills the wildlife corridor through the area. A plan for the Whittier Narrows area, sometimes called “the Emerald Necklace,” proposes to eventually have a string of parks along the San Gabriel River and Rio Hondo, stretching from the Whittier Narrows Dam County Recreation Area along the rivers to the Santa Fe Dam area, into the City of Irwindale. This would better connect wildlife from the Puente Hills, Chino Hills, Santa Ana Mountains and the other Peninsular Ranges of Southern California with the San Gabriel Mountains, and the Transverse Ranges across the northern side of the San Gabriel Valley.

Moving east across Interstate-605, the SEA begins at the end of Sycamore Canyon Road and the mouth of Sycamore Canyon (off Workman Mill Road on the south side of the west section of Rose Hills Memorial Park). The northern boundary essentially follows the edge of developed portions of the Rose Hills Memorial Park, the Puente Hills Landfill, and rural residential and suburban developments of the Hacienda Heights area, eastward to Schabarum Regional County Park. The southern boundary in this area tracks the edge of urban development along the southern slopes of the Puente Hills bordering the City of Whittier and the community of La Habra Heights. The SEA in this southern slope area includes some areas impacted by oil production that are otherwise connective by virtue of largely natural habitat of chaparral and grasslands. Much of this area of the SEA is critical habitat for the coastal California gnatcatcher. The critical habitat of the gnatcatcher extends into areas with appropriate habitat for the gnatcatcher among some development, for example, Rose Hills Memorial Park and the Puente Hills Landfill. These areas were not included in the SEA because they did not meet the SEA mapping criteria.

Much of the summit area in the Puente Hills is conserved and under restoration by the Puente Hills Habitat Preservation Authority (PHHPA), which has sponsored important studies on habitat and wildlife movement, restoration, and the wildlife movement tunnel under Harbor Boulevard at the eastern side of the SEA. The SEA in this western end of the Puente Hills includes important natural drainages on the west side of the Puente Hills, which drain to the San Gabriel River: much of Sycamore Canyon, with a fine riparian woodland; and Turnbull Canyon with a mixed riparian forest containing ash, sycamore, and oak. The ridges around Turnbull Canyon are mixed grassland and chaparral, with coastal sage scrub and a scattered population of the federally-threatened coastal California gnatcatcher. Mixed chaparral and cactus scrub on the Turnbull Canyon and Sycamore Canyon slopes support a local population of the sensitive coastal cactus wren (*Campylorhynchus*

brunneicapillus sandiegensis). Other areas of the southwest slope drainages include Worsham Creek, La Cañada Verde Creek, Arroyo Pescadero, and San Miguel Creek. Underpasses of Colima Road, which could otherwise block the east-west wildlife movement along the Puente Hills, are used by wildlife as shown by studies sponsored by the PHHPA. (SWCA Environmental Consultants, 2012)

A lobe of the SEA goes over the ridge to natural habitat along north-facing slopes. These tributaries of Joe Hill Wash have a mix of oak and walnut woodland habitats along multiple drainages that end in San Jose Creek. Other areas of north slope drainage to San Jose Creek are included in the SEA on the southeast side of Workman Mill and along the transmission line corridor in the Workman Mill area. The north-slope boundary skirts the developed areas of the community of Hacienda Heights. An area of planned development in the oak woodland just west of Schabarum Regional County Park has been excluded from the SEA.

Continuing east, the northern SEA boundary crosses the Schabarum Park accessory corridor and includes the undeveloped portions, as well as those of neighboring Trailview County Park in the SEA. Here the northern boundary is trending southeast, skirting along the edge of residential development within unincorporated Rowland Heights. The southern SEA boundary in this area skirts development in the community of La Habra Heights and includes the southern slope of Powder Canyon, which has a variety of natural habitats including riparian and north-slope oak woodland, California walnut woodland, rocky hillsides, chaparral, and some grassland. Powder Canyon is part of the watershed of San Jose Creek. Here the SEA crosses Fullerton Road in a broad swath about a 0.4 mile wide that includes the Powder Canyon undercrossing and Pathfinder Park on the east side. Pathfinder Park has riparian and chaparral habitat. There is an area around the ridgeline development along Vantage Pointe Drive that has been excluded from the SEA.

The northern SEA boundary continues along the edge of development at the southern edge of the communities of Rowland Heights to include walnut woodland, oak woodland, grassland, and chaparral vegetation on the north-facing slopes and central ridge of the Puente Hills. This area includes tributaries in the Puente Hills for the Brea Canyon watershed. The boundary crosses Brea Canyon (Santa Ana River watershed) and State Route-57 at the edge of development in the Ciyt of Diamond Bar, and continues along the boundary of natural vegetation to the San Bernardino-Los Angeles County line. East of State Route-57, this urban-wildland interface is more or less the boundary between development in the eastern San Gabriel Valley and the natural areas of the Firestone Boy Scout Reservation, with its focal area on Tonner Canyon (also in the Santa Ana River watershed).

From the crossing of Fullerton Road, the southern SEA boundary encompasses the naturally-vegetated central ridgeline of the Puente Hills, and extends south along the west side of Harbor Boulevard to include natural area around a wildlife passage tunnel under Harbor Boulevard. This tunnel was constructed by the Puente Hills Landfill Natural Habitat Preservation Authority, and its mud floor has many track prints that attest to frequent use by deer and other animals. The tunnel has the ridgeline area on its west side (with scattered residences), and on the east side are a deep canyon with fine riparian oak woodland, hills with scattered oil wells, walnut woodland, and grasslands. The southern boundary includes the canyon, but excludes the hills and grasslands of the oil field that are on the ridgeline and south of the canyon. On the northern slope of the included canyon is the Vantage Pointe development, which is excluded from the SEA. On the east side of the oil field, the southern SEA boundary trends southeast along natural vegetation boundaries to the Orange-Los Angeles County line. At the Orange-Los Angeles County line, the SEA borders the development in the City of Brea in Orange County for a short distance, and continues through grassland and chaparral to cross the State Route-57 into walnut woodlands, southern oak woodland,

chaparral, coastal sage scrub, and riparian woodlands of Tonner Canyon on the Firestone Boy Scout Reservation. Tonner Canyon is in the Santa Ana River watershed, and the ridge separating Brea and Tonner canyons is generally considered the divide between the Puente Hills and the Chino Hills. From here the southern SEA boundary continues eastward on the Orange-Los Angeles County line to the three-way junction with the San Bernardino-Los Angeles County line. For its eastern border in the Chino Hills, the SEA boundary turns north and follows along the San Bernardino-Los Angeles County line to contact with the northern boundary. In Orange County, south of the Orange-Los Angeles County line, is the Chino Hills State Park, with grasslands, chaparral, and riparian oak woodlands that extend across into the Firestone Boy Scout Reservation.

Critical habitat for the coastal California gnatcatcher is generally coincident with the SEA in the western part of the SEA, but has lobes and fingers that extend into development areas where the preferred natural habitat of the gnatcatcher, coastal sage scrub, coexists with less dense residential areas. East of Fullerton Road, the gnatcatcher critical habitat differs from the SEA. Gnatcatcher critical habitat narrowly includes the Harbor Boulevard wildlife passage tunnel, goes on the south side of the Vantage Point exclusion area, and trends into Orange County on the eastern side of the oilfield that borders the Vantage Point development. There is a small area of gnatcatcher critical habitat in the Firestone Boy Scout Reservation in the County that connects to the large area of critical habitat in Orange County and the Chino Hills.

The majority of the SEA lies within unincorporated County jurisdiction. Other local jurisdictions have also been included within the SEA in order to delineate the boundaries of functioning habitat units. These include the City of Diamond Bar, the City of Industry, the City of La Habra Heights, the City of Montebello, the City of Pico Rivera, the City of South El Monte, and the City of Whittier.

Vegetation

The SEA encompasses the remaining relatively undisturbed habitat areas in the County portion of the Puente Hills. These include portions of the Montebello Hills, Whittier Narrows, Rio Hondo, Sycamore Canyon and Turnbull Canyon to the west; Powder Canyon; and Brea Canyon and Tonner Canyon to the east. Each of these areas contains relatively undisturbed examples of woodland, shrubland, grassland and wetland communities that once existed throughout the inland hills complex of the Los Angeles Basin. Included among these habitats are excellent examples of oak woodland, oak riparian forest, southern willow scrub and walnut woodland. Intermixed with these are stands of mixed chaparral, coastal sage scrub and grasslands, which taken as a whole, form a valuable wildlife habitat unit of regional importance. It should be noted that the SEA includes areas disturbed and developed for rural residential and oil extraction. Generally, these conditions are found in the Montebello Hills, Brea Canyon, La Habra Heights, and the hills above the Whittier area.

Interconnecting corridors for wildlife have a mixture of disturbed habitat areas, native vegetation, naturalized vegetation, and sparsely developed land. While such areas do not represent key regional habitats, they have been recommended for inclusion in the SEA in order to recognize the importance of the wildlife corridor function of the SEA to exchange genetic material between plant and animal populations throughout the Puente Hills, the Chino Hills, the Santa Ana Mountains, and the natural areas of other Peninsular Ranges of Southern and Baja California.

Good examples of the variety of riparian habitat are found near the Whittier Narrows Nature Center, including lowland riparian and freshwater marsh habitat, rich soils deposited from flood waters, and impressive streamside vegetation of willows, sycamores, cottonwoods, and mulefat. The Whittier Narrows Nature Center has records for the County Recreation Area, which document a very rich and

diverse vertebrate fauna with 24 species of mammals, over 300 species of birds, 8 reptiles, 4 amphibians, and several fishes. The birds include 65 sensitive species and 50 year-round resident species. Most of these are related in some way to the riparian habitats.

Plant communities identified in the *Significant Ecological Area Description* in 2006 used the standard methodology and terminology of the time. Eight major plant communities found within the Puente Hills SEA were listed in 2006: oak woodland, oak riparian forest, walnut woodland, southern willow scrub, chaparral, coastal sage scrub, freshwater marsh, and non-native grassland. The variety of topography, soil types, slope aspects and water availability within this SEA creates a range of physical habitats, which support numerous plant species.

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

Oak Woodland: A plant community dominated by species of the oak genus (*Quercus*). Within this SEA this species is the coast live oak (*Quercus agrifolia* var. *agrifolia*), which typically grows to heights of 20 to 40 feet and forms either closed or open tree canopies. Understory vegetation varies from grassland in areas subject to grazing to shrubs where topography is steeper and/or grazing has been relaxed. It may also intergrade with shrub communities. Within this SEA, oak woodland is scattered throughout many hillsides, drainages and broad valleys, it is most prevalent on northfacing slopes and in drainage bottoms. Particularly large complexes of oak woodland are found in Powder Canyon, Brea Canyon, Tonner Canyon, and the hills of Hacienda Heights.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Oak Riparian Forest: A highly related community to oak woodland found in this SEA. This community is also dominated by coast live oak. The primary difference between oak woodland and oak riparian forest is the greater availability of water in riparian situations, which is expressed in a denser tree canopy and higher density of trees. There is also a greater number of hydrophytic (moister favoring) plant species in the understory. Typical riparian trees, such as western sycamore (*Platanus racemosa*) and willow (*Salix* spp.), commonly occur as well. Oak riparian forest is best developed within the Sycamore Canyon, Turnbull Canyon, Brea Canyon, and Tonner Canyon drainages. It is also scattered in other drainages throughout the SEA.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak forest) Forest Alliance

- *Platanus racemosa* (California sycamore woodlands) Woodland Alliance

Walnut Woodland: Often intergrades with oak dominated woodlands or develops as a distinct community. This community is dominated by the Southern California black walnut (*Juglans californica*), which grows 10 to 30 feet high. More often than not, the Southern California black walnut grows in open stands; however, closed tree canopies are not uncommon. In similar fashion to

oak woodlands its understory varies from grasses to shrubs. Thus, it forms stands ranging from savannahs to forests throughout the SEA. It is most common on the hillsides of Brea Canyon, Powder Canyon, and Tonner Canyon, where it forms some of the best developed examples south of Ventura County in Southern California.

Corresponding MCV communities:

- *Juglans californica* (Southern California black walnut groves) Woodland Alliance

Southern Willow Scrub: Well developed southern willow scrub communities are found along several major canyon bottoms in this SEA, particularly Brea Canyon and Tonner Canyon. Smaller patches of this community are also found scattered along smaller drainage and tributaries, as well as at seeps and around artificially created impoundments used for livestock watering. This community is dominated by species of *Salix*, which form nearly monotypic stands, due to their dense growth. These stands generally reach 10 to 20 feet in height with little understory vegetation.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance

- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Mixed Chaparral: A shrub community composed of robust species. Within this SEA, these species include laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), lemonadeberry (*Rhus integrifolia*), and western blue-elderberry (*Sambucus nigra* var. *caerulea*). These and other shrub species form dense vegetation covers that grow 5 to 10 feet in height. The development of chaparral is most pronounced and extensive within Sycamore Canyon, Turnbull Canyon, Brea Canyon and Tonner Canyon.

Corresponding MCV communities:

- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance

- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Coastal Sage Scrub: A shrubland community that exhibits a shorter stature than chaparral, dominated by drought deciduous shrubs. This plant community is dominated by California sagebrush (*Artemisia californica*), California brittle bush (*Encelia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), and California buckwheat (*Eriogonum fasciculatum*). Coastal sage scrub also forms dense stands, which grow three to four feet in height. Within this SEA, it may be found in scattered patches or large contiguous stands, which are highly integrated with mixed chaparral, including areas used for oil extraction where coastal sage scrub persists and previously disturbed areas where it has become reestablished. An important subunit of coastal sage scrub found within this SEA is cactus scrub, which is found extensively on southerly and westerly slopes, especially in Sycamore Canyon, Hellman Park and La Habra Heights.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance

- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatuma* (California sagebrush-California scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Keckiella antirrhinoides* (bush penstemon scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Non-Native Grassland: Dominated by non-native annual grasses and forbs, but potentially supporting stands of native grasses and wildflowers, including special-status plant species. Dominant species typically include brome grasses, wild oats and mustards. This community has become established as a result of livestock grazing, whereby native vegetation is removed (sometimes by mechanical means) and replaced by more opportunistic species. Non-native grassland is found throughout all areas of this SEA and may support a variety of wildlife species adapted to open habitats of low stature, including several grassland-dependant bird species.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards (upland mustards) Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Centaurea* (*solstitialis*, *melitensis*) (yellow star-thistle fields) Semi-Natural Herbaceous Stands
- Lolium perenne ([Festuca perennis] perennial rye grass fields) Semi-Natural Herbaceous Stands

Freshwater Marsh: Small areas supporting freshwater marsh are found at scattered locations in the broader valleys along major drainages. This community may also exist at other locations in and around artificially created impoundments that are used to water livestock. Freshwater marsh requires perennially shallow water or saturated soils. Dominant plants are emergent species, including

cattails and bulrushes.

Corresponding MCV communities:

- *Phragmites australis* (common reed marshes) Herbaceous Alliance and Semi-Natural Stands
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha* (*angustifolia*, *domingensis*, *latifolia*) (cattail marshes) Herbaceous Alliance
- *Sarcocornia pacifica* (*Salicornia depressa*) ([*Salicornia pacifica*] pickleweed mats) Herbaceous Alliance
- *Lemna* (*minor*) and relatives (duckweed blooms) Provisional Herbaceous Alliance

Wildlife

Wildlife within the SEA has been frequently documented to be very diverse and abundant due to the large acreage of natural open space, the diversity of habitat types, and regional connectivity. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the SEA and connected areas constitutes a functional ecosystem for a wide variety of wildlife species. This includes areas within the SEA as well as the regional ecosystem.

Analysis of invertebrates on any given site generally is limited by a lack of specific data; however, the size of the SEA and diversity of habitats present is considered sufficient to encompass healthy populations of a large number of invertebrate species. Amphibian populations are generally restricted in semi-arid and arid habitats, but may be particularly abundant where riparian areas occur. The SEA is likely to support a variety of amphibians in abundance within wetland areas along the major canyon bottoms and the moister oak woodland areas. Many essential reptilian habitat characteristics are present within the SEA. These include open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather. These characteristics, as well as the variety of habitat types present, are likely to support a wide variety of reptilian species.

The scrubland, woodland, riparian, and grassland habitats in the SEA provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, the SEA encompasses many year-round water sources, abundant raptor foraging, perching, and nesting habitat. The combination of these resources as well as the mosaic of many community types provides for a high diversity of bird species. Several of these species, including California gnatcatcher and cactus wren, may use this SEA as their only consistent occurrence in the southeastern portion of the County.

Not unlike other taxonomic groups, mammal populations within the SEA are diverse and reflective of the unique combination of several habitat types. Unlike many other inland hills within the Los Angeles Basin, this SEA is large enough to support relatively stable large mammal populations despite the urban surroundings. Such mammals include bobcat, mountain lion and mule deer.

Invertebrates were investigated by LSA (2005), who documented several scarce butterflies,

including California dogface (*Colias eurydice*), western tailed-blue (*Everes amyntula*), Mormon metalmark (*Apodemia mormo*), and fatal metalmark (*Calephelis nemesis*).

The herpetofauna of this SEA was investigated by Haas et. al. (2002) and LSA (2005), who found the hills to support several locally rare or sensitive species including western spadefoot, arboreal salamander, two species of slender salamander (*Batrachoseps nigriventris* and *B. major*), coastal whiptail (*Cnemidophorus tigris stejnegeri*), red diamondback rattlesnake (*Crotalus ruber*), and western blind snake (*Leptotyphlops humilis*).

Sensitive mammals include the San Diego desert woodrat (*Neotoma lepida intermedia*) and habitat specialists such as cactus mouse (*Peromyscus eremicus*) and western gray squirrel (*Sciurus griseus*).

The Puente Hills are extremely important for bats, with eleven species documented recently (Remington 2006), including Yuma myotis (*Myotis yumanensis*), western red bat (*Lasiurus cinereus*), pallid bat (*Antrozus pallidus*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), and western mastiff bat (*Eumops perotis*).

The federally Threatened California gnatcatcher occurs in at least two areas of the Puente Hills in the vicinity of Arroyo San Miguel east of Colima Drive and a smaller possibly irregular population along Sycamore Canyon. These are among the last areas of occupancy for this bird in the Los Angeles Basin, and among the northenmost for the species.

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

Evidence of significant wildlife movement throughout the Puente Hills SEA has recently been documented in a two year carnivore study commissioned by the Santa Monica Mountains Conservancy as part of a multi-jurisdictional effort to establish a region wide wildlife movement linkage. This SEA represents the County portion of a continuous series of natural open space within the Puente Hills and Chino Hills. Overall, this open space extends north and west from State Route 91 (SR-91) in Orange and Riverside Counties to the Whittier Narrows reach of the San Gabriel River. The open space physically links the Puente/Chino Hills with the Santa Ana Mountains and the San Gabriel Mountains, respectively. By virtue of these linkages and a complex of interconnected habitat units throughout the hills, the Puente/Chino Hills function as both an important wildlife linkage and resident habitat area for regional wildlife populations.

Within the SEA itself several habitat units, well defined by major canyons, exist. These include Sycamore Canyon, Turnbull Canyon, Powder Canyon, Brea Canyon and Tonner Canyon. Each of these, in and of themselves, is capable of supporting a diversity and abundance of wildlife. More importantly, however, these habitat units are connected by a series of open space corridors, which allows population exchange to occur. Maintenance of biological diversity and population viability is accorded throughout the SEA and the chance of local species extinctions due to isolation is minimized. This function is acutely important for wide-ranging species that meet their breeding and/or habitat requirements over broad areas.

Although several major arterial roads and highways cross the hills, continued use of undercrossings

and surface crossings by wildlife has been documented. This movement is largely east-west trending between large habitat blocks located in the western, central and eastern portions of the SEA. Species documented as moving through the area include bobcat, coyote (*Canis latrans*), gray fox (*Urocyon cinereoargenteus*), and mule deer (*Odocoileus hemionus*).

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The SEA has large coincident areas with the designated critical habitat for the coastal California gnatcatcher.

Sensitive Plant Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include Southern California black walnut groves, holly leaf cherry chaparral, California brittle bush scrub, bush penstemon scrub, and white sage scrub, which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Nevin's barberry (*Berberis nevinii*) RPR 1B.1, SE, FE
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1

- Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*) RPR 2.2
- Many-stemmed dudleya (*Dudleya multicaulis*) RPR 1B.2
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2
- Prostrate vernal pool navarretia (*Navarretia prostrata*) RPR 1B.1
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) RPR 1B.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- California Orcutt grass (*Orcuttia californica*) RPR 1B.1, SE, FE

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Cooper’s hawk (*Accipiter cooperii*) CDFG Watch List
- Tricolored blackbird (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Long-eared owl (*Asio otus*) SSC, LAA
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- Ferruginous hawk (*Buteo regalis*) BCC, BLMS, CDFG Watch List, AWL, LAA
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) BCC, FSS, SSC

- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, BCC, FSS, SE
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- Merlin (*Falco columbarius*) CDFG Watch List
- Yellow-breasted chat (*Icteria virens*) SSC
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) SE
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Bank swallow (*Riparia riparia*) ST
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Mexican long-tongued bat (*Choeronycteris mexicana*) SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Western yellow bat (*Lasiurus xanthinus*) WBWG High
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- Yuma myotis (*Myotis yumaensis*) BLMS, WBWG Low-Medium
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria that consider regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE PUENTE HILLS SEA

Criterion	Status	Justification

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The population of the California gnatcatcher at the Montebello Hills is probably one of the largest single populations in the U.S. Pairs occur throughout the County portion of the Puente Hills, especially in Sycamore Canyon and Arroyo San Miguel. The coastal cactus wren has significant populations in the Puente Hills, occurring in the Montebello Hills, Sycamore Canyon, Rose Hills, Hellman Park in Whittier, and through Hacienda Heights into Rowland Heights. Several CNPS-Rare plants occur in the Puente Hills, including Weed's mariposa-lily.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Several plant communities within this SEA are CDFG highest priority communities due to their restricted distribution in the Southern California region. These communities include walnut woodland, which is scattered throughout this SEA: oak riparian woodland, which is best developed in the major drainages of Sycamore Canyon, Turnbull Canyon, Powder Canyon, Brea Canyon, and Tonner Canyon, but is found elsewhere; stands of southern willow scrub along many of the drainages; scattered freshwater marsh; and coastal sage scrub, which is found in scattered patches over hillsides throughout.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	All of the plant communities and habitats mentioned above as being restricted in distribution on a regional basis are also restricted in distribution within the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	This SEA represents the only large complex of multiple, relatively undisturbed habitats in southeastern portion of the County. It is regionally important to many resident species, as well as migrating species, which would otherwise not be able to meet their habitat requirements. In particular, large mammal and overwintering birds of prey and song birds make use of this area. The Puente Hills are a well known migration corridor for migratory songbirds during spring migration (April and May). On foggy May mornings, the hilltops can support hundreds of individual migrant song birds, which forage actively in all available habitats.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The Puente Hills represent the clear northern edge of the Peninsular Ranges. For this reason, taxa such as red diamond rattlesnake, occur here at the edge of their range, where they co-occur with the more widespread Pacific rattlesnake. Several bird species extend west through the Puente Hills into the Los Angeles Basin and the Whittier Hills (Oak Titmouse, Grasshopper Sparrow). These species are absent from the floor of the Los Angeles Basin. The Whittier Narrows Nature Center provides the public with extensive information and opportunities for field study of the Whittier Narrows natural environment.
	Areas that would provide for the preservation of relatively		Both the oak woodlands and walnut woodlands within this SEA represent excellent relatively undisturbed examples. The walnut

Criterion		Status	Justification
F)	undisturbed examples of the original natural biotic communities in the County.	Met	woodlands in this area are reported to be the best remaining stands south of Ventura County.

In conclusion, the area is an SEA because it contains: A) habitat of core populations of endangered or threatened plant species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) populations of scientific interest because they are at range extremes and intermix with species from other areas with known examples of reptiles and birds; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Rio Hondo College Wildlife Santuary SEA

Location

General

The Rio Hondo College Wildlife Sanctuary Significant Ecological Area (SEA) is located on the western edge of the Puente Hills near the San Gabriel River, within the City of Whittier, and south of the Interstate-605. The SEA is the designated a Wildlife Sanctuary of the Rio Hondo College in the northern and eastern part of the campus, and is currently used as a study area by the students and faculty of Rio Hondo College. The SEA includes natural areas bordering two ridgelines—one impacted by transmission line installation and the maintenance roads, and the other with substantially natural areas. Between the two ridgelines is an intermittent drainage with riparian elements. The area includes good examples of riparian woodland, chaparral, oak woodland, coastal sage scrub, and chaparral communities. The entire unpaved campus area is designated critical habitat for the federally-threatened coastal California gnatcatcher (*Polioptila californica californica).*

The SEA is located within the El Monte United States Geological Survey (USGS) 7.5' California Quadrangle.

General Boundary and Resources Description

The SEA boundaries have a roughly triangular shape. The northern boundary begins in an arroyo with walnut woodland toward the west end of the North Entry Road, and goes southeastward along the border of natural habitat, passing the justice buildings near the bottom of the transmission line ridge. The boundary continues along the base of the ridge to the border with the Rose Hills Memorial Park. On the east side, the boundary tracks the edge of the Rose Hills Memorial Park peripheral road towards the southeast, including a slope of probable restored white-sage scrub. Where the peripheral road meets the crest of the southern ridge, the boundary turns northwest and goes along the southern ridge top, countinues down off the ridge northwestward around the Rio Hondo College campus parking lots and buildings to connect with the small walnut woodland.

The northern ridge primarily contains non-native grassland, with a strong component of introduced mustards, but also a strong component of scattered native chaparral shrubs, such as elderberry (*Sambucus* spp.), sumacs (*Rhus* spp.); and in the ravines, dense growths of large chaparral shrubs,

including coast live oak (*Quercus agrifolia*). Some of the slopes on the north ridge have prickly-pear shrub. The watercourse between the ridges is riparian with plants, such as mulefat (*Senecio douglasii*) and coyote bush (*Baccharis* spp.). The ravines on the north face of the southern ridge that border the watercourse have fine oak woodland, cherry woodland, and walnut woodland at the upper ends. The SEA provides examples of many of the common and cherished natural habitats of the County for study. Sign of coyote (*Canis latrans*), fox (probably *Urocyon cinereoargenteus*) and bobcat (*Lynx rufus*) can be noted while walking the transmission line northern ridge. The biotic communities within the SEA contain a variety of plant life and an abundant fauna.

Due to location near the extreme northwestern end of the Peninsular Ranges, the SEA is an excellent place to observe the geographical range variability of a number of species that are characteristic of the mountains to the south, and have their northernmost occurrences in the Puente Hills, such as the red diamond rattlesnake (co-occurring with the Pacific rattlesnake).

Vegetation

There are three native plant communities in the SEA: coastal sage chaparral scrub, chaparral and oak woodland. The remainder of the SEA has areas classified as ornamental landscaping, developed and disturbed. Plant communities identified in the *Significant Ecological Area Update Study* by PCR in 2000 used the standard methodology and terminology of the time. Eight major plant communities found within the SEA were listed in 2000, including oak woodland, oak riparian forest, walnut woodland, southern willow scrub, chaparral, coastal sage chaparral scrub, freshwater marsh, and non-native grassland. The variety of topography, soil types, slope aspects and water availability within this SEA create a range of physical habitats that support numerous plant species.

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

<u>Oak Woodland</u>: A plant community dominated by species of the oak genus (*Quercus*). Within this SEA this species is the coast live oak (*Quercus agrifolia* var. *agrifolia*), which typically grows to heights of 20 to 40 feet and forms either closed or open tree canopies. Understory vegetation varies from grassland in areas subject to grazing to shrubs where topography is steeper and/or grazing has been relaxed. It may also intergrade with shrub communities, in this case coastal sage chaparral scrub. Within this SEA oak woodland occur along the northern boundary.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

<u>Walnut Woodland</u>: Often intergrades with oak dominated woodlands or develops as a distinct community. This community is dominated by the Southern California black walnut (*Juglans californica*), which grows 10 to 30 feet high. More often than not, the Southern California black walnut grows in open stands; however, closed tree canopies are not uncommon. In similar fashion to oak woodlands, its understory varies from grasses to shrubs. It forms stands ranging from savannahs to forests throughout the nearby Puente Hills SEA.

Corresponding MCV communities:

- *Juglans californica* (Southern California black walnut groves) Woodland Alliance

Coastal Sage Scrub: A shrubland community found in this SEA is coastal sage chaparral scrub, which has a high percentage of non-native species. This plant community is dominated by California sagebrush (*Artemisia tridentata*), California brittle bush (*Encelia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), and California buckwheat (*Eriogonum fasciculatum*). Coastal sage chaparral scrub also forms dense stands, which grow three to four feet in height. Where the coastal sage chaparral scrub community is now found had been cleared and disturbed by past disturbances, such as grading and transition line construction.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Opuntia littoralis* (coast prickly pear scrub) Shrubland Alliance

Chaparral: A shrub community composed of robust, woody species. Within this SEA these species include laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), lemonadeberry (*Rhus integrifolia*) and prickly-pear cactus. These and other shrub species form dense vegetation covers growing 5 to 10 feet in height. The development of chaparral is most pronounced on north facing slopes within the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Developed and ornamental landscaping areas include agricultural use areas, ornamental landscaping, and structures, and occupy the majority of the project area. All perimeter areas, sections adjacent to roads, and space not occupied by parking lots or buildings have been

landscaped. Some mulefat (*Baccharis salicifolia*) and sage species have been used for landscaping purposes. Species in this vegetation type included pine, acacia, ash, cotoneaster, eucalyptus and California privet. These species have grown large, with extensive canopies, and have developed an understory in some areas.

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation found within the SEA includes a high proportion of weedy species, including black mustard, fennel, tree tobacco, and castor bean. The disturbed areas are a result of previous use for staging maintenance activities or easements.

Corresponding MCV communities:

No corresponding communities at this time

Wildlife

Wildlife within any ecosystem is largely determined by the available plant communities and in the SEA, the relatively small area only allows for limited local foraging and wildlife habitat.

Analysis of the presence of invertebrates is limited by a lack of specific data; however, the size of the SEA and diversity of habitats present is considered sufficient to encompass healthy populations of a large number of invertebrate species.

The potential presence of amphibians varies greatly between habitats within the project site. Terrestrial species may or may not require standing water for reproduction. Terrestrial species avoid desiccation by burrowing underground; within crevices in trees, rocks, and logs; and under stones and surface litter during the day and dry seasons. Due to their secretive nature, terrestrial amphibians are rarely observed, but may be quite abundant if conditions are favorable. Aquatic amphibians are dependent on standing or flowing water for reproduction. Such habitats include fresh water marshes and open water (reservoirs, permanent and temporary pools and ponds, and perennial streams).

Reptilian diversity and abundance varies with habitat type and character. Although some species prefer only one or two plant communities, most will forage in a variety of communities. A number of reptile species prefer open habitats that allow free movement and high visibility. The only reptiles recorded are the western side-blotched lizard (*Uta stansburiana elegans*) and the Great Basin fence lizard (*Sceloporus occidentalis longipes*).

For birds, some of the reestablishing vegetation in the disturbed areas and some areas of the ornamental landscaping provide limited foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, there is seasonally available water onsite within the drainage channels. The overall condition of the plant communities is mainly ornamental landscape. For raptors, some of the habitat within the project site could have the potential to provide foraging opportunities and breeding areas for raptors. Trees found along the perimeter of the project site and throughout the campus have the potential to provide suitable perches for foraging over the open areas and scrub communities. These areas provide habitat for small birds and mammals, which results in a potentially large prey population on the project site. There is remnant coastal sage scrub in the SEA, and this may form a stepping stone for the coastal California gnatcatcher. Both the Puente Hills SEA and the critical habitat of the gnatcatcher are disjunct across Interstate-605. To have connectivity between the gnatcatcher's large population in the Montebello Hills, the SEA extends as a welcoming arm on the east side of Interstate-605. This would be equally important for

other aerial fauna and windblown seeds of plants on the west side of Interstate-605.

For mammals, the reestablishing vegetation in the disturbed areas and the landscaped areas on the project site have the potential to support a limited number of mammal species. During field surveys, mammal species were either directly observed or their presence was deduced by diagnostic signs (tracks, scat, burrows, etc.).

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section of this document.

Wildlife Movement

The SEA is located in an area of potentially low to moderate value with regards to regional and local terrestrial wildlife movement. The Interstate-605 and industrial development that borders the freeway serves as a barrier for wildlife movement. The SEA is a gateway area for connectivity between the Peninsular Ranges of Southern California and the Transverse Ranges to the north. Naturally, they are connected by use of wildlife, particularly birds, insects, and plant propagules that are found along the San Gabriel River and Rio Hondo, which are only a 0.5 mile to the west of the Rio Hondo College. The San Gabriel River is designated by California Audubon as a State Important Bird Area (IBA), and extended arms of Semi-Natural habitat are important to connectivity for wildlife of the area and the region. Wildlife species could potentially use the SEA and possibly the ornamentally landscaped areas to facilitate movement and provide access to natural resources located in the Puente Hills. A wide variety of wildlife use linkages throughout the SEA from the extreme southeast up to the Rio Hondo College Wildlife Sanctuary, including mountain lion (*Puma concolor*) and a number of medium-sized mammals.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The Rio Hondo College Wildlife Sanctuary is critical habitat for the coastal California gnatcatcher.

Sensitive Plan Communities and Habitats

The SEA supports one habitat type considered sensitive by resource agencies. This is inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. This community is coastal sage chaparral scrub and it occupies a part of the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are

experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) RPR 1B.2
- Southern California black walnut (*Juglans californica*) RPR 4.2

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- Cooper's hawk (*Accipiter cooperii*) CDFG Watch List
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) BCC, FSS, SSC
- Yellow-breasted chat (*Icteria virens*) SSC
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium

- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE RIO HONDO WILDLIFE SANCTUARY SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The SEA is critical habitat for the coastal California gnatcatcher.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Not Met	The SEA does not contain unique habitat restricted in distribution in the region of Southern California.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Not Met	The SEA does not contain unique habitat for the region of the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	This SEA is located on the eastern upland area of the San Gabriel River and is considered critical habitat for connectivity of the coastal California gnatcatcher. The largest population of the gnatcatcher in the County is on the west side of the San Gabriel River and the Interstate-605. Critical habitat in the SEA is on the east side of the San Gabriel River and the Interstate-605. The SEA is an arm extending to the rest of the gnatcatcher critical habitat and connecting to the rest of the Puente Hills SEA. The SEA is an important connecting and migration area for plants and wildlife of the Puente-Chino Hills of the Peninsular Ranges.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The SEA is part of the education network of the public community colleges of the Los Angeles area. The area is used by the college for scientific study and research on native wildlife and plants. The college maintains field records on the biotic resources of the area. The SEA is relatively undisturbed. As a “choke point” for the wildlife corridor, it is an important area of research and study of connectivity.

F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Not Met	The SEA has little disturbed areas, as well as recovering natural habitat.

In conclusion, the area described is an SEA because it contains: A) core habitat for a threatened species; D) is an important choke point in a significant migration and connective corridor of the County and the region of Southern California; and E) is an important resource to the education community of the County because of its connective status and its natural and recovering habitats.

San Andreas SEA

Location

General

The San Andreas Significant Ecological Area (SEA) is located in the western portion of the Antelope Valley in an unincorporated area of the County. The SEA is the second largest SEA and includes many diverse habitats. This is in large part due to the northwestern area being a meeting place for several diverse biomes and wildlife corridors. There are five ecoregions that meet in this area and have biological species that extend along the SEA and San Andreas Fault in the County. These ecoregions include: California Coastal Mountains; California Central Valley; Tehachapi Mountains, which extend to the southern Sierra Nevada; San Gabriel Mountains, which extend to other ranges in the Transverse Ranges; and the Antelope Valley, which is the northwestern end of the Mojave Desert. Wildlife corridors extend along the courses of the mountain ranges, as well as along the San Andreas Fault and Garlock Fault, which provide a great variety of habitats and frequent emergent water that is important for wildlife and plant movement and connectivity. The location and orientation of the SEA coincides with a segment of the San Andreas Fault Zone. The SEA includes a small portion of the western south-facing Tehachapi foothills, which are known for wildflower field displays in years of good rainfall. The SEA goes east and south across grasslands at the western tip of the Antelope Valley, includes Quail Lake, a former sag pond enhanced to receive water from the West Branch of the California Aqueduct. From Quail Lake, the SEA extends up the northern foothills of Liebre Mountain and Sawmill Mountain, and includes: Portal Ridge; large portions of Leona Valley; Ritter Ridge, Fairmont and Antelope buttes; and portions of Anaverde Valley. It also includes a disjunct area that encompasses water bodies along the fault, Lake Palmdale, and Una Lake, with a terminus at Barrel Springs.

The Antelope Valley and adjacent desert slopes of the SEA are recognized by California Audubon as the Antelope Valley (Lancaster) Globally Important Bird Area (IBA). Near Lake Palmdale in the disjunct eastern section of the SEA is part of the Antelope Valley (Lancaster) IBA and near Barrel Springs is part of the Santa Clara River IBA.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Lebec, La Liebre Ranch, Neenach School, Fairmont Butte, Little Buttes, Liebre Mountain, Burnt Peak, Lake Hughes, Del Sur, Lancaster West, Sleepy Valley, Ritter Ridge, and Palmdale.

General Boundary and Resources Description

The northwestern tip of the SEA encompasses south-facing foothills at the western end of the

Tehachapi Mountains, in the northwest corner of the County, on the eastern side of Tejon Pass. The largest extent of native perennial grassland and diverse wildflower fields occurs in this area of the County.

From the Tehachapi Foothills, the southern boundary goes south-southeast along Interstate-5, including much of Peace Valley in the Gorman area, which is the broad faulted area that includes Gorman Creek. The SEA boundary crosses the Western Branch of the California Aqueduct, which is south of the junction of Interstate-5 and State Route-138. The boundary continues south along Interstate-5 until the point where the Liebre Mountain ridgeline dips to the highway, and the SEA boundary turns eastward and follows the ridgeline along the northern side of Liebre Mountain.

Along this section of Interstate-5 are several large underpasses for stream courses that are extremely important for wildlife connectivity across Interstate-5. The Angeles National Forest boundary is just east of the highway, and south of the aqueduct. Just north of the Liebre Mountain ridgeline, the San Andreas borders the north, east, and south sides of the eight unit of the Joshua Tree Woodlands SEA. This woodland is an unnamed arroyo, and it has the clumped growth form that Joshua trees (*Yucca brevifolia*) exhibit in hilly areas. The woodland is near the westernmost Joshua tree of the species. The woodland is a range extreme end. The SEA includes the northern slope are of the Angeles National Forest with its diversity of chaparral, grasslands, and oak and conifer forests.

After turning east from Interstate-5 and climbing uphill on the northern slope of Liebre Mountain, the SEA boundary crosses the ridgeline to the south to incorporate natural pristine areas of headwaters for all the branches of Liebre Gulch, which are part of the headwaters for Piru Creek, which is the largest tributary of the Santa Clara River in Ventura County. The SEA boundary returns to the north face of Liebre Gulch at about the location of Sandberg. The boundary tracks the Sawmill Mountain-Maxwell Road, which is generally on the broad ridgeline of the mountains and generally trends in a southeasterly direction. This ridgeline is the headwaters of Castaic Creek, which is the largest tributary of the Santa Clara River in the County. Castaic Creek is above the Castaic Reservoir, which extends into Cienega Canyon and Fish Creek, which is federally-designated critical habitat for the endangered arroyo toad (*Anaxyrus californicus*). In addition, maintenance of pure water in the source areas is critical for the species.

The boundary turns northeast where it meets Lake Hughes Road. This is an extremely important area of connectivity as the canyon along the Lake Hughes Road (Elizabeth Lake Canyon) drains to Castaic Creek and the Santa Clara River, whereas the Amargosa Creek that goes east and west from the Lake Hughes Road in the Fault valley drains to the Antelope Valley in both directions. The junction is topographically broad and well-vegetated though residential, which is excellent for wildlife connectivity in spite of a few houses. This is one of the major connective areas for the Pacific Ocean, the mountains, and the Mojave Desert. Castaic Creek is a principle tributary of the Santa Clara River, which runs to the seacoast in Ventura County. The San Gabriel Mountains are the home of Castaic Creek. The Antelope Valley receives most of the drainages from the San Andreas Fault valley.

The SEA boundary goes north at the junction with Lake Hughes Road and then skirts the Lake Hughes community's extension into Pine Canyon along the San Andreas Fault. In Pine Canyon, the boundary turns north and returns to its southeasterly direction, skirting the Lake Hughes development along the southern edge of Portal Ridge. Portal Ridge is entirely included in the SEA. A side extension of the southern boundary includes Lake Hughes, which is important for migrating waterfowl, with its sheltered position in the Fault valley. The boundary extends along the southern

edge of Lake Hughes, Munz Lake, and Elizabeth Lake, and then trends southeast to go along the Leona Divide, including a large portion of Leona Valley.

The entire area along the San Andreas Fault is rich in wetlands and bogs, but Leona Valley has these in abundance, even in many yards. All of the wetlands in the San Andreas Fault valley and Portal Ridge are home to the greatest concentration of the tricolored blackbird in Southern California, many of which are year-round residents. This bird species has experienced great population declines in recent years and is proposed for listing at both state and federal levels. In the community of Leona Valley, the southern SEA boundary goes along Lost Valley Creek and then along Leona Road to exclude some of the denser residential area in this section. The included area in Leona Valley has many of the bogs that line the Fault and the less populated farm areas along Portal Ridge north of Leona Road.

Around the area of the northward drainage of Bouquet Canyon, the southern SEA boundary dips south around an expansive area of drainages and bogs used by the tricolor blackbird on the old Ritter Ranch. From Ritter Canyon to the east, the boundary follows the old Ritter Ranch high road along the Sierra Pelona, crosses from 40th Street to the California Aqueduct along vegetation in the Anaverde Valley (where the boundary transitions from the Amargosa Creek drainage to the Anaverde Creek drainage), and then follows the aqueduct to the area where Anaverde Creek exits from the Fault valley. At the Lancaster Landfill boundary, the SEA boundary goes north and becomes the north SEA boundary at Verde Point.

The northern boundary of the SEA begins at Tejon Pass next to Interstate-5 and follows the Kern-Los Angeles County line eastward to the intersection of the western branch of the California Aqueduct in the western Tehachapi Foothills. This area along the Kern-Los Angeles County line is a contact boundary with the designated critical habitat for the federally-endangered California condor (*Gymnogyps californicus*), which is a bird that nearly went extinct and was saved by prodigious efforts in captive breeding. The boundary turns southeast to contour along the toe of slopes of low-lying hills where some of the few remaining examples of native perennial bunchgrass communities in California are found. The boundary crosses State Route-138, just east of where Tentrock Canyon also crosses State Route-138 and turns eastward into the Antelope Valley. Here the northern SEA boundary turns east to contour along the foothill area of the northern slope of Liebre Mountain. The boundary continues southeast following the edge of agricultural fields, which are important for raptor foraging. These fields often go along the Los Angeles Aqueduct, which is a little south of the California Aqueduct in this area, or along the California Aqueduct itself.

The boundary eventually tracks along the northeast edge of Fairmont Reservoir (another breeding site for the tricolored blackbird), and turns northeast to include a patchwork of farmed areas between the Fairmont and Antelope buttes, which are known to have tricolored blackbird feeding grounds. The boundary makes an inclusive path to encompass the Broad Canyon Wash, the Fairmont and Antelope buttes, and the Antelope Valley California Poppy Reserve State Park. These desert buttes are concentrated wintering grounds for birds of prey, and provide roosting sites that are surrounded by cultivated fields that support a plentiful food supply of rodents, rabbits, and hares. They are the most westerly buttes in the Mojave Desert, and with their proximity to the San Gabriel Mountains, have unique ecological relationships of scientific interest. Near the southern area of the buttes, the boundary follows agricultural fields along 130th Street West and then 135th Street West south to Munz Ranch Road (Willow Springs Road on some maps). Along 135th Street West, the boundary crosses Myrick Canyon where it spreads out onto the plain of the desert floor. The upstream areas of Myrick Canyon are included in the SEA.

The boundary tracks along the northwest side of Munz Ranch Road and then crosses to include Willow Springs Canyon, where Willow Springs Canyon is most natural. Where Willow Springs Canyon crosses the California Aqueduct, the northern SEA boundary turns east along the California Aqueduct as it passes along the northern base of Portal Ridge. Following the southern edge of the California Aqueduct, the boundary continues in a southeasterly direction to the east side of Ritter Ridge to Leona Siphon. A development along Joshua Tree Ranch Road near the summit of Ritter Ridge is an area exclude from the SEA. The SEA northern boundary turns east for roughly one quarter mile along the southern edge of a tributary to Amargosa Creek. Where the Amargosa Creek terminates Ritter Ridge, the SEA boundary crosses the creek and ascends along the ridgeline of an unnamed ridge to where it meets the southern boundary at Verde Point.

East across the State Route-14 is a disjunct part of the SEA that incorporates Lake Palmdale and Una Lake and extends along the Fault to 37th Street East, including the ridgelines north and south of Barrel Springs Road, which includes the sag ponds or Barrel Springs. The Palmdale Ditch is included in this part of the SEA. Many migrant birds using the desert water features can be observed at these artificial lakes and the natural springs of this area during the spring and fall migration.

The gap between the two portions of the SEA includes the Antelope Valley Landfill, disturbed lots, and State Route-14.

The majority of land within the SEA lies within unincorporated area of the County. Other jurisdictions include the Angeles National Forest, the City of Palmdale, and the City of Lancaster.

Vegetation

Due to the unique location along a large fault valley that is bordered by pressure ridges, the large variation in elevation and topography, and because it includes a meeting point of large “eco-regions,” vegetation within the SEA is the most diverse of any of the County’s SEAs. The SEA includes arid desert communities, foothill woodland communities; high elevation piñon pine; chaparral communities; sag pond wetlands; native perennial grasslands; desert and montane riparian; and deciduous, oak, and conifer forest communities. In addition, the transition zones between these communities produce unusual species compositions. At its northwest end, the SEA encompasses a portion of the south-facing foothills of the Tehachapi Mountains, which have wildflower displays in years of good rainfall. Characteristic species include buttercup, poppy, owl’s clover, lupines, and many species of sunflowers and daisies. Moving southeast, the SEA contains the north-facing slopes of Liebre and Sawmill mountains. The upper slopes of these mountains are densely vegetated with chaparral and scattered mixed woodlands. The lower slopes are more sparsely vegetated with scrub species, mixed scrub and grassland. The grassland and some ephemeral wildflower fields extend onto the plain of the valley floor. Most of the mountainous portion of the SEA is undisturbed open space, with a few scattered residential developments. The peak of Liebre Mountain represents the highest point in the SEA at 5,701 feet above mean sea level (MSL).

Moving further southeast, Portal Ridge is included in the SEA. This ridge has a series of peaks on the north side of the Fault. Upper slopes are vegetated with dense chaparral, juniper woodland, and Joshua tree woodland, while lower slopes are vegetated with scrub species and grassland. A series of small lakes (originally sag ponds along the Fault) occur along the base of the south-facing slopes including Lake Hughes, Munz Lake, Elizabeth Lake, and other smaller unnamed ponds. Further southeast, the SEA surrounds Amargosa Creek and a large portion of its watershed located in the Leona Valley. All along the north-facing slopes, a number of named and unnamed natural washes, often with flora that is sensitive and prefers watercourses, drain onto the valley floor from the

mountains and the Fault. Named canyons are Tentrock; Horse Camp; Cow Spring; Pine; Spencer; Burnside; Adams; Rivera; Baldwin Grade; North Long; South Long; Kings; Bleich; Broad Wash; Price; Myrick; Willow Springs; many unnamed drainages off Portal Ridge and some off Ritter Ridge; Johnson Road Wash; and Railroad. Also included are Godde Pass Wash, Amargosa Creek, and Anaverde Creek. The vegetation transitions to grasslands and wildflower fields, where the SEA stretches north across the valley floor and encircles the Antelope and Fairmont buttes of the Antelope Valley California Poppy Reserve. Numerous large "bald" areas in the higher elevations have grasslands bordered by shrublands or forests.

The mountainous part of the SEA has an extremely diverse flora, which arises because of its topographic diversity and because of its connectivity to the western end of the SEA. This area is a meeting place for five diverse ecoregions and two or more wildlife corridors. Because of the great vegetation diversity, the area provides an opportunity for educational use, nature study, and scientific research. Foothill woodland extends from the western end of the SEA, all the way to Ritter Ridge, which is an uncommon plant community that contains oak savannahs of blue oak (*Quercus douglasii*) and valley oak (*Quercus lobata*), and gray pine woodland (*Pinus sabiniana*). This community is more common in northern and central California, where it occurs along foothill and valley borders in the inner coastal ranges and western foothills of the Sierra Nevada. This is the only place it occurs in the County. Several component species, such as blue oak, gray pine, and California buckeye (*Aesculus californica*) reach their southern limits here. Slopes and ridge-tops are covered with chaparral and yellow-pine forest, which becomes pinyon-juniper woodland under desert influences on the lower northern slopes. Joshua tree woodland and sagebrush scrub cover the lower desert hillsides.

On the lower slopes and in the valleys south of the main ridgeline, one can find southern oak woodland, valley grassland, riparian woodland, sagebrush scrub, and even coastal sage scrub. All of these are relatively common in the County with the exception of sagebrush scrub. This community, which is dominated by Great Basin sage (*Artemisia tridentata*), is not common south of the Owens Valley in California. Populations in Southern California are probably relics from a prehistoric time when the community extended much further south than it does today.

Ritter Ridge comprises the most easterly portion of the San Gabriel Mountains in the SEA. Slopes on the north side of this ridgeline are vegetated with one of the best Joshua tree and California juniper mixed woodlands in the County. The combination of desert chaparral and foothill woodlands creates habitat for a rich faunal list, with 25 mammals, 53 birds and 19 reptiles recorded. South-facing slopes contain a mixture of scrub and chaparral communities. This section of the SEA includes Amargosa Creek and a portion of its watershed, which is located at the base of the south-facing slopes, and a segment of Anaverde Creek and watershed located in Anaverde Valley. All these creeks and washes support a variety of riparian communities.

The disjunct part of the SEA that includes Palmdale Lake, Una Lake, and Barrel Springs has upland portions vegetated with a desert scrub community with scattered Joshua trees. The lower areas consist of open water ponds, cattail ponds, riparian woodlands, and other wetland communities.

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are

presented below. These include desert scrub, chaparral, native grassland, non-native grassland, southern willow scrub, foothill woodland, Joshua tree woodland, juniper woodland, valley oak woodland, bigcone Douglas fir-canyon oak woodland, southern cottonwood-willow riparian forest, freshwater marsh, alkali marsh, alluvial wash, and disturbed.

Desert Scrub: A moderately tall, fairly open shrubland with several species that contribute to the canopy. Dominants often include Great Basin sagebrush, antelope bush, saltbush, and/or rabbitbrush with several perennial grasses dispersed between the shrubs. Within the SEA, this community often intergrades with juniper woodlands and Joshua tree woodlands. Desert scrub is also found on lower slopes within the Fault, on north-facing slopes that transition onto the valley floor. They are also found on the buttes and adjacent valley floor, interspersed with grasslands.

Corresponding MCV communities:

- Krascheninnikovia lanata (winterfat scrubland) Shrubland Alliance
- *Suaeda moquinii* ([*Suaeda nigra*] bush seepweed scrub) Shrubland Alliance
- *Atriplex spinifera* (spinescale scrub) Shrubland Alliance
- *Pluchea sericea* (arrow weed thickets) Shrubland Alliance
- *Artemisia tridentata* (big sagebrush) Shrubland Alliance
- *Artemisia tridentata* ssp. *vaseyana* (mountain big sagebrush) Shrubland Alliance
- *Atriplex canescens* (fourwing saltbush scrub) Shrubland Alliance
- *Atriplex confertifolia* (shadscale scrub) Shrubland Alliance
- *Atriplex hymenelytra* (desert holly scrub) Shrubland Alliance
- *Atriplex lentiformis* (quailbush scrub) Shrubland Alliance
- *Acacia greggii* (catclaw acacia thorn scrub) Shrubland Alliance
- *Ericameria paniculata* (black-stem rabbitbrush scrub) Shrubland Alliance
- *Ambrosia salsola* (cheesebrush scrub) Shrubland Alliance
- *Baccharis salicifolia* (mulefat thickets) Shrubland Alliance
- *Larrea tridentata* (creosote bush scrub) Shrubland Alliance
- *Larrea tridentata-Ambrosia dumosa* (creosote bush-white burr sage scrub) Shrubland Alliance
- *Atriplex polycarpa* (allscale scrub) Shrubland Alliance
- *Atriplex spinifera* (spinescale scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance

- *Eriogonum heermannii* (Heermann's buckwheat patches) Provisional Shrubland Alliance
- *Eriogonum wrightii* (Wright's buckwheat patches) Dwarf Shrubland Alliance
- *Ephedra californica* (California joint fir scrub) Shrubland Alliance
- *Allenrolfea occidentalis* (iodine bush scrub) Shrubland Alliance
- *Sarcobatus vermiculatus* (greasewood scrub) Shrubland Alliance
- *Yucca brevifolia* (Joshua tree woodland) Woodland Alliance
- *Prosopis glandulosa* (mesquite bosque) Woodland Alliance
- *Ambrosia salsola* (cheesebush scrub) Shrubland Alliance
- *Grayia spinosa* (spiny hop sage scrub) Shrubland Alliance
- *Castela emoryi* (crucifixion thorn stands) Shrubland Special Stands
- *Ericameria nauseosa* (rubber rabbitbrush scrub) Shrubland Alliance
- *Gutierrezia sarothrae* (broom snake weed scrub) Provisional Shrubland Alliance
- *Ambrosia dumosa* (white bursage scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance
- *Purshia tridentata* (bitter bush scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance

Chaparral: Consists of broad-leafed or needle-leafed, sclerophyllous (hard-leafed), medium height to tall shrubs. These shrubs form a dense cover on steep slopes below 5,000 feet in Southern California. Dominant species found within this community include chamise, manzanita, California lilac, laurel sumac, toyon, western mountain-mahogany, and desert mountain-mahogany. This plant community occupies most of the higher elevations within the SEA and is frequently interspersed with scrub and woodlands.

Corresponding MCV communities:

- Adenostoma fasciculatum (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance

- *Arctostaphylos glandulosa* (Eastwood's manzanita chaparral) Shrubland Alliance
- *Arctostaphylos glauca (*bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus spinosus* (greenbark ceanothus chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance

Grassland: Consist of low, herbaceous vegetation that is dominated by grasses, but also harbors native forbs and bulbs, as well as naturalized annual forbs. Grasslands within the SEA include both non-native and native grasslands.

Native grassland consists of at least 10 percent relative cover of native herbaceous plants (grasses and forb species), with the remaining coverage similar to non-native grasslands. North of Quail Lake there are areas where native perennial bunchgrasses and wildflowers dominate. In addition, introduced annual grasses are conspicuously limited. Small patches of native grassland can also be found scattered throughout the SEA. This occurs mostly in openings in coastal sage scrub and mixed with non-native grasslands in significant acreage on and surrounding the buttes, as well as throughout the Tehachapi foothills at the western end of the SEA. The Tehachapi foothills are part of an expansive perennial grassland. Many areas of native grassland, such as those surrounding the buttes, support dense displays of wildflowers, which have carpeted the area in some years and are referred to as “wildflower fields.”

Corresponding MCV communities:

- Leymus condensatus (giant wild rye grassland) Herbaceous Alliance
- *Nassella cernua* ([*Stipa cernua*] nodding needle grass grassland) Provisional Herbaceous Alliance
- *Nassella lepida* ([*Stipa lepida*] foothill needle grass grassland) Provisional Herbaceous Alliance
- *Nassella pulchra* ([*Stipa pulchra*] purple needle grass grassland) Herbaceous Alliance

Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender oats, wild oats, ripgut brome, foxtail chess, wild mustard, red-stemmed filaree, Mediterranean schismus, and golden tops. Non-native grasslands are located in small patches throughout the SEA, within more significant acreage on and adjacent to the buttes, and on south-facing slopes of the Tehachapi Mountains.

Corresponding MCV communities:

- *Avena (barbata, fatua)* (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica (nigra)* and other mustards (upland mustards) Semi-Natural Herbaceous Stands
- *Bromus (diandrus, hordeaceus)-Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands

- *Bromus rubens-Schismus (arabicus, barbatus)* ([*Bromus madritensis* ssp. *rubens*] Red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands

- *Lolium perenne* ([*Festuca perennis*] perennial rye grass fields) Semi-Natural Herbaceous Stands

Wildflower Field: An amorphous mix of herbaceous plants noted for conspicuous annual wildflower displays, although noteworthy displays do not occur every year and appear to depend on rainfall patterns. Dominance varies from site to site and from year to year at any one particular site. Species frequently present include California poppy, tidy tips, dove lupine, valley tassels, purple owl's clover, and broad-leaved gilia. Within the SEA, prominent wildflower fields occur on the south facing slopes of the Tehachapi Mountains and buttes.

Corresponding MCV communities:

None at this time.

Southern Willow Scrub: A riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets that occur within and adjacent to watercourses. The dominant species of this community within the SEA are arroyo willow, red willow, and black willow. This community occurs in segments along portions of many of the drainages, as well as the periphery of many of the ponds and lakes throughout the SEA.

Corresponding MCV communities:

- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance

- *Salix gooddingii* (black willow thickets) Woodland Alliance

Foothill Woodland: A broad community designation encompassing the tree-dominated plant communities occurring transitionally between grasslands and montane chaparral or bigcone Douglas fir-canyon oak woodland. Dominant tree species include interior live oak, blue oak, valley oak, California buckeye, and foothill pine. Foothill woodland occupies much of the western slopes of the SEA.

Corresponding MCV communities:

- Pinus jeffreyi (Jeffrey pine forest) Forest Alliance

- *Pinus ponderosa* (Ponderosa pine forest) Forest Alliance

- *Quercus lobata* (valley oak woodland) Woodland Alliance

- *Abies concolor-Pinus lambertiana* (white fir-sugar pine forest) Forest Alliance

- *Abies concolor* (white fir forest) Forest Alliance

- *Pseudotsuga macrocarpa* (bigcone Douglas-fir forest) Forest Alliance

- *Quercus douglasii* (blue oak woodland) Woodland Alliance
- *Umbellularia californica* (California bay forest) Forest Alliance
- *Quercus kelloggii* (California black oak forest) Forest Alliance
- *Aesculus californica* (California buckeye groves) Woodland Alliance
- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance
- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Pinus coulteri* (Coulter pine woodland) Woodland Alliance
- *Pinus sabiniana* (ghost pine woodland) Woodland Alliance
- *Quercus wislizenii* (interior live oak woodland) Woodland Alliance

Joshua Tree Woodland: An open woodland with Joshua trees, usually as the only arborescent species, and numerous smaller shrub species interspersed between. Shrub species include a great variety with dominants of Great Basin sagebrush, rabbitbrush, creosote bush, and cheese bush. Joshua tree woodland is present on the lower slopes around the Fault in the eastern half of the SEA.

Corresponding MCV communities:

- *Yucca brevifolia* (Joshua tree woodland) Woodland Alliance

Juniper Woodland: An extremely open woodland dominated by California juniper, with understory that is typical of desert scrub. The majority of this community is found on lower slopes in the eastern half of the SEA, and often intermingles with Joshua tree woodland and chaparral communities.

Corresponding MCV communities:

- Juniperus californica (California juniper woodland) Woodland Alliance

Valley Oak Woodland: An open woodland community dominated by valley oak. The understory is a grassy savannah that is composed mostly of non-native grasses. Valley oak woodland occurs on the north-facing slope of Liebre Mountain in the western area of the SEA.

Corresponding MCV communities:

- Quercus lobata (valley oak woodland) Woodland Alliance

Bigcone Douglas Fir-Canyon Oak Woodland: A dense woodland with a mix of dominant tree species. Canyon oak forms a broken canopy with scattered bigcone Douglas fir, California black oak, and foothill pine. Areas not underneath the canopy are usually dominated by chaparral species, such as scrub oak, manzanita, and California lilac. This community occupies most of the higher elevation slopes within the SEA.

Corresponding MCV communities:

- Pseudotsuga macrocarpa (bigcone Douglas-fir forest) Forest Alliance

- Quercus chrysolepis (canyon live oak forest) Forest Alliance

Southern Cottonwood-Willow Riparian Forest: An open broad-leafed winter-deciduous riparian forest dominated by Fremont cottonwood, black cottonwood, black willow, and red willow. The southern cottonwood-willow riparian forest within the SEA occupies short segments of Amargosa Creek, as well as the periphery of several lakes and ponds.

Corresponding MCV communities:

- *Populus fremontii* (Fremont cottonwood forest) Forest Alliance
- *Populus trichocarpa* (black cottonwood forest) Forest Alliance

Freshwater Marsh: Develops in areas of still or slow-moving permanent freshwater. This community is dominated by the perennial, emergent monocot cattails, which reach a height of two to three meters and often form a closed canopy. Bulrushes are dominant below the cattail canopy. Freshwater marsh occurs in small patches along Amargosa Creek and other wetland areas scattered along the Fault.

Corresponding MCV communities:

- *Phragmites australis* (common reed marshes) Herbaceous Alliance and Semi-Natural Stands
- Schoenoplectus californicus (California bulrush marsh) Herbaceous Alliance
- *Typha (angustifolia, domingensis, latifolia)* (cattail marshes) Herbaceous Alliance
- *Sarcocornia* [*Salicornia*] *pacifica* (*Salicornia depressa*) (pickleweed mats) Herbaceous Alliance
- *Lemna (minor) and relatives* (duckweed blooms) Provisional Herbaceous Alliance

Alkali Marsh: Similar to the freshwater marsh, but with more salt-tolerant hydrophytes present. Species associated with this community include cattails, *Carex* spp., *Juncus cooperi*, saltgrass, *Nitrophila occidentalis*, *Scirpus nevadensis*, and common reed. Alkali marsh occurs in small segments along Amargosa Creek and other wetland areas scattered along the Fault.

Corresponding MCV communities:

- Sarcobatus vermiculatus (greasewood scrub) Shrubland Alliance
- *Schoenoplectus americanus* (American bulrush marsh) Herbaceous Alliance
- *Sporobolus airoides* (alkali sacaton grassland) Herbaceous Alliance
- *Allenrolfea occidentalis* (iodine bush scrub) Shrubland Alliance
- *Atriplex lentiformis* (quailbush scrub) Shrubland Alliance
- *Suaeda moquinii* ([*Suaeda nigra*] bush seepweed scrub) Shrubland Alliance

Alluvial Wash: Also known as floodplain sage scrub, alluvial wash comprises phreatophytic (a plant

type that obtains water from the watertable via a long taproot) and upland shrubs that occur in infrequently flooded and scoured habitats such as flood plains, or seasonal streams. The dominant shrub is scalebroom with Great Basin sagebrush, rabbitbrush, sweetbush, and chaparral yucca. Alluvial wash is distributed in larger drainages such as upper Amargosa Creek, Myrick Canyon Wash, Willow Springs Wash and others located throughout the SEA.

Corresponding MCV communities:

- Baccharis salicifolia (mulefat thickets) Shrubland Alliance
- *Forestiera pubescens* (desert olive patches) Shrubland Alliance
- *Rosa californica* (California rose briar patches) Shrubland Alliance
- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance
- *Acacia greggii* (catclaw acacia thorn scrub) Shrubland Alliance
- *Ephedra californica* (California joint fir scrub) Shrubland Alliance
- *Ericameria paniculata* (black-stem rabbitbrush scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance
- *Ericameria nauseosa* (rubber rabbitbrush scrub) Shrubland Alliance
- *Ericameria nauseosa-Ericameria teretifolia* (needleleaf rabbitbrush scrub) Shrubland Alliance
- *Gutierrezia sarothrae* (broom snake weed scrub) Provisional Shrubland Alliance

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA includes non-native grasses and “weedy” herbaceous species, native and non-native, including mustards, telegraph weed, Russian thistle, dock, yellow star thistle, Australian saltbush, and cocklebur. Several disturbed areas occur scattered throughout the SEA and take the form of residential developments, paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Wildlife

Wildlife within the SEA is diverse and abundant due to the large acreage of natural open space and the diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the SEA and adjoining areas constitutes a functional ecosystem. This ecosystem contains a variety of wildlife species, both within the SEA and as part of the regional ecosystem.

Analysis of invertebrates on any given site is generally limited by a lack of specific data; however, the size of the SEA and diversity of habitats present is considered sufficient to encompass healthy populations of a large number of invertebrate species. The wetlands and aquatic habitats within the SEA support diverse faunas of freshwater and alkaline pool arthropods, including native fairy shrimp,

brine flies, and tiger beetles. Vernal pools, which are a sensitive habitat, are being discovered and would be expected in a heavily faulted area with many depressions created by faulting. These would not have typical through-flow of erosional features. Vernal pools often have sensitive fauna and flora. Insect orders are particularly well-represented taxonomically, with moderate levels of species endemism including coleoptera, diptera, hymenoptera and diurnal and nocturnal lepidoptera.

Amphibian populations are generally scarce in desert habitats, but may be particularly abundant where desert riparian areas occur or in the mountains. The SEA is likely to support a variety of amphibians within wetland areas along the Fault and the moister woodland areas and canyon bottoms of the mountains. Many essential reptilian habitat characteristics are present within the SEA. These include open habitats that allow free movement and high visibility, and small mammal burrows for cover and escape from predators and extreme weather. These characteristics, as well as a diversity of habitat types are likely to support a wide variety of reptilian species.

The scrubland, woodland, riparian, and grassland habitats in the SEA provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, the SEA encompasses many year-round water sources, abundant raptor foraging, perching, and nesting habitat. The combination of these resources, as well as the confluence of many community types support an unusually high diversity of bird species. Small and large mammal populations within the SEA are diverse and reflective of the unique convergence of several habitat types.

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources.

Wildlife Movement

The SEA includes several important linkages for wildlife movement. The foothills in the western-most part of the SEA are an important linkage between the San Gabriel Mountains, the Tehachapi Mountains, and the Coastal Ranges. This linkage to the Tehachapi Mountains is important because they connect to the southern-most extent of the Sierra Nevada Mountains. The Tehachapi Mountains represent the only mountain linkage from the Transverse Ranges and the Coast Ranges to the Sierra Nevada Range. This feature may be an important topographic reference for migrating birds, as well as providing high elevation foraging grounds along the migratory route. The several ranges that meet at the western end of the SEA, and provide a valuable link for gene flow between divergent populations of many species. The SEA includes numerous drainages that extend onto the Antelope Valley floor towards resources, such as the Fairmont and Antelope buttes. These washes provide an important linkage for animals traveling between the Valley floor, the buttes and the western part of the San Gabriel Mountains. In addition, Anaverde Creek, Amargosa Creek, and Pine Canyon facilitate east-west wildlife movement through the mountains, Portal Ridge, and Ritter Ridge. Tributary drainages from the Santa Clara River, such as Elizabeth Lake Canyon and San Francisquito Canyon connect the ocean and coastal zones to the Fault. The frequency of valuable riparian communities along this travel route, which are located within an otherwise arid climate, further contributes to the SEA's importance for wildlife and habitat linkages in the region.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from

habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The communities include Joshua tree woodland, valley oak woodland, native grassland, wildflower field, southern cottonwood-willow riparian forest, fresh-water swamp, alkali meadow, and southern willow scrub, and all these occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- San Fernando Valley spineflower (*Chorizanthe parryi* var*. fernandina*) FC, SE, RPR 1B.1

In addition, the following species considered by CNPS to be rare, threatened or endangered have the potential to occur:

- Lancaster milk-vetch (*Astragalus preussii* var*. laxiflorus*) RPR 2.3
- Slender mariposa lily (*Calochortus clavatus* var*. gracilis*) RPR 1B.2
- Alkali mariposa lily (*Calochortus striatus*) RPR 1B.2
- Pierson's morning glory (*Calystegia peirsonii*) RPR 4.2
- Parry's spineflower (*Chorizanthe parryi* var*. parryi*) RPR 1B.1

- San Gabriel bedstraw (*Galium grande*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Robbins' nemacladus (*Nemacladus secundiflorus* var*. robbinsii*) RPR 1B.2
- Short-joint beavertail (*Opuntia basilaris* var*. brachyclada*) RPR 1B.2
- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Arroyo toad (*Anaxyrus californicus*) FE, SSC
- California red-legged frog (*Rana draytonii*) FT, SSC
- Western pond turtle (*Emys marmorata*) BLMS, SSC, FSS
- San Diego coast horned lizard (*Phrynosoma blainvillii*) BLMS, SSC, FSS
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Western yellow-billed cuckoo (*Coccyzus americanus* ssp. *occidentalis*) FC, FSS, BCC
- Willow flycatcher (*Empidonax traillii*) SE
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, SE, ABC
- California condor (*Gymnogyps californianus*) FE, SE, ABC, CDF
- American peregrine falcon (*Falco peregrinus anatum*) FD, SD CDF, CDFG Fully Protected, BCC
- Least Bell's vireo (*Vireo bellii pusillus*) FE, SE, ABC
- Mohave ground squirrel (*Xerospermophilus mohavensis*) ST

In addition, other state-listed species of concern have the potential to occur:

- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Tehachapi slender salamander (*Batrachoseps stebbinsi*) ST, BLMS, FSS
- Silvery legless lizard (*Anniella pulchra pulchra*) SSC, FSS
- Two-striped garter snake (*Thamnophis hammondii*)
- Cooper's hawk (*Accipiter cooperii)* CDFG Watch List

- Sharp-shinned hawk (*Accipiter striatus*) CDFG Watch List
- Tricolored blackbird (*Agelaius tricolor*) ABC, BLMS, SSC, BCC
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Long-eared owl (*Asio otus*) SSC
- Burrowing owl (*Athene cunicularia*) BLMS, SSC, BCC
- California spotted owl (*Strix occidentalis occidentalis*),
- Ferruginous hawk (*Buteo regalis*) CDFG Watch List, BCC
- Mountain plover (*Charadrius montanus*) FPT, ABC, BLMS, SSC, BCC
- Northern harrier (*Circus cyaneus*) SSC
- Yellow warbler (*Dendroica petechia* ssp. *brewsteri*) SSC, BCC
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- Merlin (*Falco columbarius*) CDFG Watch List
- Prairie falcon (*Falco mexicanus*) CDFG Watch List, BCC
- Bald eagle (*Haliaeetus leucocephalus*) FD, SE, CDF, CDFG Fully Protected, FSS, BCC
- Yellow-breasted chat (*Icteria virens*) SSC
- Western least bittern (*Ixobrychus exilis hesperis*) SSC, BCC
- Loggerhead shrike (*Lanius ludovicianus*) SSC, BCC
- Golden eagle (*Aquila chrysaetos)* CDF, CDFG Fully Protected, CDFG Watch List, BCC
- Osprey (*Pandion haliaetus*) CDF, CDFG Watch List
- Le Conte's thrasher (*Toxostoma lecontei*) ABC, SSC, BCC
- Gray vireo (*Vireo vicinior*) ABC, BLMS, SSC, BCC
- Virginia's warbler (*Oreothlypis virginiae*) ABC, CDFG Watch List, BCC
- Pallid bat (*Antrozous pallidus*) BLMS, SSC, FSS, WBWG High Priority
- Townsend's big-eared bat (*Corynorhinus Plecotus) t. townsendii*) BLMS, SSC, FSS, WBWG High Priority
- Pale big-eared bat (*Corynorhinus Plecotus) t. townsendii pallescens*) BLMS, SSC, FSS, WBWG High Priority

- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High Priority
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High Priority
- California leaf-nosed bat (*Macrotus californicus*) BLMS, SSC, FSS, WBWG High Priority
- Yuma myotis (*Myotis yumanensis*) BLMS, WBWG Low-Medium Priority
- Southern grasshopper mouse (*Onychomys torridus ramona*) SSC
- Tehachapi pocket mouse, (*Perognathus alticolus inexpectatus*) SSC, FSS
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE SAN ANDREAS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not met Met in Future?	Although there are several listed species that occur within the SEA, this criterion is not met due to the lack of known core population areas. The far northwestern border with Kern County is the edge of critical habitat for the California condor. The tricolored blackbird may soon be listed and has its largest population in Southern California within the SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA encompasses a series of marshes and sinks concentrated along the San Andreas Fault Zone, which are both unique and restricted in distribution. The Fairmont and Antelope buttes represent a unique habitat due to their location, as the most westerly buttes of the Mojave Desert and their close proximity to several geographic regions. As the confluence of a number of major geographical areas, the Mojave Desert, the San Gabriel Mountains of the Transverse Ranges, the Coastal Ranges, and the Tehachapi Mountains produces a unique and regionally rare flora that represents a transition between desert, foothill, and several montane environments.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The confluence of five major geographical areas–the Mojave Desert, the San Gabriel Mountains, the Coastal Ranges, the Tehachapi Mountains, and the Central Valley–has produced the most unique and diverse flora found in the County, and represents a transition between desert, foothill, and montane environments. The SEA also includes the southern limit of the foothill woodland community, blue oak, gray or foothill pine, and California buckeye, rare relic stands of Great Basin

	Criterion	Status	Justification
			sagebrush scrub, and rare wildflower fields.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The Fairmont and Antelope buttes provide vital habitat to many wide ranging species, which forage in outlying habitat, but use the buttes for nesting, roosting, denning, and refuge. The buttes also serve as concentrated wintering grounds for birds of prey, which are rare in the County, and which forage on grassland and agricultural fields in the vicinity. Lakes and other wetland areas along the Fault and throughout the SEA provide breeding habitat for amphibians and feeding habitat for migrating birds that traverse the slopes adjacent to the Mojave Desert. The Fault is one of the principle wildlife corridors and connective areas for in the County. Major drainages (Santa Clara River, San Francisquito Canyon, and Lake Elizabeth Canyon) run from the coast through the San Gabriel Mountains and end at the Fault, which also has extensive riparian habitat that facilitates migration. The Fault provides the final westernmost linkage to the Mojave Desert (Antelope Valley). The tricolored blackbird is a year-round resident of the SEA.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The transition of several habitat types including: creosote bush scrub, Joshua tree/California juniper mixed woodland, and desert chaparral, makes the SEA valuable for educational and scientific reasons. The close proximity of the Fairmont and Antelope buttes to the San Gabriel Mountains renders them unique in their species composition and ecological relationships and, therefore, of interest to scientists. The concentrated diversity of vegetation types, particularly in the western half of the SEA, creates an outstanding opportunity for educational use. This area also harbors the southern limit of the foothill woodland community, blue oak, gray or foothill pine, and California buckeye, as well as rare relic stands of great basin sagebrush scrub.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The slopes of Ritter Ridge support one of the most pristine mixed stands of Joshua tree and California juniper. The location of the SEA at the confluence of five major geographical areas, the Mojave Desert, the Central Valley, the San Gabriel Mountains of the Transverse Ranges, the Coastal Ranges, and the Tehachapi Mountains has produced a community-rich area with desert, foothill, and montane environments. The SEA encompasses large, mostly undisturbed examples of all of these communities.

In conclusion, the area is an SEA because it contains: B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of

original natural biotic communities in the County.

San Dimas Canyon and San Antonio Wash SEA

Location

General

The San Dimas Canyon and San Antonio Wash Significant Ecological Area (SEA) is located along the cismontane foothills of the eastern San Gabriel Mountains. Generally, the SEA is centered on the mouths of four major canyons, which flow from the mountains and interconnecting terrain. From east to west, these canyons include San Antonio Canyon above the City of Claremont as one component; and Live Oak, Marshall, and San Dimas canyons above the cities of La Verne and San Dimas as a second component. The SEA incorporates areas with diverse natural habitat ranging from high elevations to the foothill alluvial areas of two of the major drainages of the San Gabriel Mountains. San Dimas Canyon is a tributary of the San Gabriel River. San Antonio Wash is a tributary of the Santa Ana River.

The SEA is found within the Mount Baldy and Ontario U.S. Geological Survey (USGS) 7.5' California Quadrangles.

General Boundary and Resources Description

Over most of its boundaries, particularly to the north, east, and west of both the San Dimas Canyon and San Antonio Wash components, the SEA is bordered by open space within the Angeles National Forest. Generally to the south, however, the borders are mostly defined by the edge of urban development within the San Gabriel Valley. The San Dimas Canyon component covers approximately 5,500 acres and includes portions of Live Oak, Marshall, and San Dimas canyons. The smaller component, San Antonio Canyon, covers approximately 1,200 acres of the San Antonio Canyon alluvial outwash. In total, this SEA encompasses 6,727 acres.

In general, the topography of the SEA is severe, consisting of steep-walled canyons and narrow ridgelines. Elevations range from a high of approximately 3,000 feet above mean sea level (MSL) along the ridges of San Dimas Canyon, to a low of approximately 451 feet above MSL in San Antonio Wash. Several major drainages and numerous tributaries exit the San Gabriel Mountains through this SEA.

The wide range of elevation, topography, slope aspect, and geology represent a wide array of physical habitats within this SEA. Consequently, a number of plant communities exist, including grasslands, riparian, shrublands, woodlands, and forests. Within these major community types, there are many sub-communities, which vary according to plant species dominance. This area contains the last remaining relatively well-developed lower montane riparian habitat in the eastern County. Dammed drainages have created significant reservoirs or flood control basins in the SEA. The SEA is within several jurisdictions including: the Angeles National Forest, the unincorporated area of the County, the City of Claremont, the City of Glendora, the City of La Verne, and the City of San Dimas.

The more westerly component of this SEA generally includes portions of the lower watersheds of San Dimas, Marshall, and Live Oak canyons, which is part of the San Dimas Canyon component. The San Dimas Canyon watershed is part of the Experimental Forest section of the Angeles National Forest. Experiments were conducted and data was collected here during the latter half of the 20th century to determine the relationships among rainfall, topography, vegetation, and runoff.

Much of the work and results influenced flood control in the Los Angeles Basin and even other areas of the U.S. The area was carefully protected through very limited and monitored access. The terrain chiefly includes undisturbed natural habitats of rocky canyon walls and canyon forest, riparian areas of many vegetation types, coniferous and oak forest, chaparral, and grassland. A few slopes were altered with vegetation removal in order to experiment on the effect of vegetation, and some of these are still grassland.

This SEA area on the border of the granitic San Gabriel Mountains has unusual rock strata, such as the Glendora Volcanics. Much of the grassland is natural and has unusual vegetation, such as wildflowers that prefer clay substrates. Not too distant from this area are critical habitat areas for the endangered thread-leaved brodiaea (*Brodiaea filifolia*). Some of these brodiaea and other rare wildflowers could occur in appropriate habitat of the SEA in undiscovered populations.

Beginning at Johnstone Peak in the west, the western boundary follows the ridgeline separating Big Dalton Canyon and San Dimas Canyon. Just before this ridgeline is intersected by Big Dalton Canyon Road, the SEA boundary turns east. From the area of Big Dalton Canyon Road, the northern boundary follows and crosses over a series of ridgelines to include the upper portions of several tributary canyons. It continues in this fashion in a southeasterly direction eventually meeting and following the Sunset Ridge Fire Road (Sunset Peak Motorway), which separates Wolfskill and Marshall canyons. The tributaries San Dimas Canyon include Lodi, West Fork of San Dimas, and San Dimas from near the junction with Wolfskill Canyon. The lower section of Wolfskill Canyon with and below the Wolfskill Falls is included in the SEA. The upper section of Wolfskill is not included in the SEA, but much of Marshall Canyon watershed is included, along with watersheds of Live Oak and Webb canyons in the City of Claremont.

A large lobe of the SEA extends from the Sunset Ridge Fire Road on the dividing ridgeline, to include lush canyon forests and chaparral of the slopes above the City of La Verne and City of Claremont. Most of this lobe is in municipal or private ownership. The Angeles National Forest boundary is about a 0.1 mile south of the Sunset Ridge Fire Road. The eastern boundary leaves the fire road and travels south along a ridgeline, including Live Oak Canyon in the SEA, but separating out the more developed watersheds of Palmer, Cobal, Burbank, and Gail canyons in the City of Claremont. A finger of the SEA includes the lush riparian oak forest of Webb Canyon to the edge of a development. The lobe of the SEA excludes an area around the residences and equestrian areas that surround Live Oak Reservoir. Live Oak Canyon Reservoir and its riparian oak woodland is included as far south as Base Line Road. The ridges and dissected canyons that border Live Oak Reservoir are included as far south as Base Line Road. However, the flat area of the ridge around Live Oak Reservoir and development in the periphery are excluded. The northwestern edge of the lobe includes the riparian area and slopes of Marshall Creek, but excludes developed areas, such as the Marshall Canyon Regional Park and Golf Course. The lobe boundary returns north into the Angeles National Forest at the Sunset Ridge Fire Road along the edge of Marshall Creek and the western ridge of Marshall Canyon.

From Sunset Ridge Fire Road, the southern boundary of the SEA is within the Angeles National Forest and follows the ridgeline that includes the watershed of San Dimas Canyon. The San Dimas Reservoir, with good habitat for waterfowl, is included in the SEA. The SEA extends a finger out of the Angeles National Forest along San Dimas Canyon road to include the riparian habitat along the watercourse, which is a rare example of the lowland riparian community. From the Angeles National Forest boundary and rocky cliffs above the west side of San Dimas Canyon, the SEA boundary follows the ridge of Lodi Canyon (tributary of San Dimas Canyon) to Johnstone Peak.

The eastern, disjunct segment of the SEA (San Antonio Wash) follows the San Bernardino-Los Angeles County line as its eastern boundary from about a 0.5 mile upstream of the San Antonio Dam through the San Antonio debris basin, past the San Antonio Dam, to the natural extent of alluvial fan vegetation south of the Interstate-210. This is at an area about a 0.1 mile north of Base Line Road. Downstream of the San Antonio Dam has the best example of arroyo or wash vegetation that remains in the County, and it extends onto the adjacent alluvial fan. The vegetation is a dry form of coastal sage scrub, with included desert plants that are adapted to coarse substrate. The vegetation is much more dense and stable than the alluvial fan in the arroyos behind Santa Fe Dam (San Gabriel Canyon SEA) and Hansen Dam (Tujunga Valley-Hansen Dam SEA). From its southern point, the SEA turns north to include the natural alluvial fan vegetation and border on the existing residential development on the alluvial fan. At the intersection of the San Antonio Wash with Mount Baldy Road, the SEA boundary follows the southeast side of Mount Baldy Road to the watershed of Chicken Canyon, which is a tributary of San Antonio Wash. The boundary crosses the road and includes the undeveloped part of Chicken Canyon. The boundary follows the minor ridgeline up to Potato Mountain, and goes along the south ridge of Evey Canyon back to cross Mount Baldy Road and return to the San Bernardino-Los Angeles County line in the San Antonio Debris Basin. Evey Canyon is outside the SEA, but is a preserve of the Claremont Colleges, and has excellent riparian canyon habitat. The SEA designation acknowledges the need to protext the Evey Canyon watershed. Small tributary watersheds of San Antonio Canyon with chaparral vegetation are included with the Chicken Canyon area.

Vegetation

The variety of topography, soil types, slope aspects and water availability within the San Dimas Canyon-San Antonio Wash SEA creates a range of physical habitats, which support numerous plant species. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Brief descriptions and general locations of each major plant community present within the SEA are provided below, including bigcone Douglas-fir-canyon oak forest, white alder riparian forest, alluvial fan scrub, oak woodland, oak riparian forest, walnut woodland, southern willow scrub, chaparral, coastal sage scrub, and non-native grassland.

<u>Bigcone Douglas-Fir–Canyon Oak Forest</u>: An open to dense forest dominated by bigcone Douglas-fir that is 50 to 80 feet tall over a dense canopy of canyon live oak. It is found scattered throughout the San Dimas Canyon component of this SEA on canyon sides at elevations generally above 2,500 feet, where it occupies rocky substrates. It commonly occurs in small enclaves within chaparral.

Corresponding MCV communities:

- *Pseudotsuga macrocarpa* (bigcone Douglas-fir forest) Forest Alliance
- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance

<u>White Alder Riparian Forest</u>: Found along the lower reaches of San Dimas Canyon. This community is dominated by white alder, which grow 30 to 40 feet high over a shrub understory. It typically grows along streams in bedrock-constrained, steep-sided canyons, which results in a fairly narrow riparian corridor.

Corresponding MCV communities:

- *Alnus rhombifolia* (white alder groves) Forest Alliance

Alluvial Fan Scrub: A shrub community characterized by harsh substrates and subject to episodic flooding and scouring. It is generally restricted to broad canyon outwashes, or alluvial washes. It is found in this SEA at the San Antonio Canyon mouth, where it forms an open shrub vegetation within areas of bare, scoured ground in between.

Corresponding MCV communities:

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance
- *Malosma laurina* (laurel sumac scrub) Shrubland Alliance

Oak Woodland: A plant community dominated by species of the oak genus (*Quercus*). This community includes coast live oak (*Quercus agrifolia* var. *agrifolia*), which typically grows to heights of 20 to 40 feet and the somewhat smaller coast live oak (*Quercus agrifolia* var. *agrifolia*) and canyon oak, and forms either closed or open tree canopies. Understory vegetation varies from grassland in level areas to shrubs, where topography is steeper. It may also intergrade with shrub communities. This community is scattered throughout the SEA and most prevalent on north-facing slopes and in drainage bottoms.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance
- *Quercus engelmannii* (Engelmann oak woodland) Woodland Alliance

Oak Riparian Forest: A closely related community to oak woodland found in the SEA. This community is also dominated by coast live oak (*Quercus agrifolia* var. *agrifolia*) (canyon oaks at higher elevations). The primary difference between oak woodland and oak riparian forest is the greater availability of water in riparian situations, which is expressed in a denser tree canopy cover and higher density of trees. There are also a greater number of hydrophytic (moisture-favoring) plant species in the understory. Typical riparian trees, such as western sycamore (*Platanus racemosa*) and willow occasionally occur. Oak riparian forest is best developed within the broader, more level gradient drainages of this SEA.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance

- *Quercus engelmannii* (Engelmann oak woodland) Woodland Alliance

Walnut Woodland: Often intergrades with oak dominated woodlands or develops as a distinct community. This community is dominated by the Southern California black walnut (*Juglans californica*), which grows 10 to 30 feet high. More often than not, walnut woodland in this SEA is highly intermixed with oak woodland and chaparral, and large monotypic stands are uncommon.

Corresponding MCV communities:

- *Juglans californica* (Southern California black walnut groves) Woodland Alliance

Southern Willow Scrub: Found along widely scattered reaches of several drainages throughout this SEA. This community is dominated by species of willow, which form nearly monotypic stands due to their dense growth, with an occasional cottonwood. These stands generally reach 10 to 20 feet in height with little understory vegetation.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Chaparral: A shrub community composed of robust species. Within this SEA, a number of chaparral subcommunities are found, which are differentiated by their dominant plant species. These include chamise (*Adenostoma fasciculatum*), buck brush (*Ceanothus* spp.), scrub oak (*Quercus berberidifolia*), coast live oak (*Quercus agrifolia* var. *agrifolia*), and mosaics of these depending on mixtures of species and elevation. These and other shrub species form dense vegetation covers, which grow 5 to 10 feet in height. The development of chaparral is pronounced over large hillside areas throughout both components of the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Arctostaphylos glandulosa* (Eastwood's manzanita chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus greggii* (cup leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus leucodermis* (chaparral whitethorn) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Coastal Sage Scrub: A shrubland community that exhibits less robust structure found within this

SEA. This plant community is dominated by California sagebrush (*Artemisia tridentata*), California brittle bush (*Encelia californica*), white sage (*Salvia apiana*), black sage (*Salvia mellifera*), and California buckwheat (*Eriogonum fasciculatum*). It also forms dense stands, which grow three to four feet in height. Within this SEA, it is generally found in scattered patches, which are highly integrated with mixed chaparral. These are primarily located in the lower elevation hillsides of both SEA components.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Ericameria linearifolia* (narrowleaf goldenbush scrub) Provisional Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

<u>Non-Native Grassland</u>: Dominated by non-native annual grasses and forbs. These opportunistically growing species include brome grasses, wild oats and mustards. This community became established as a result of livestock grazing and agriculture, as native vegetation is removed, sometimes by mechanical means, and replaced by more opportunistic species. Non-native grassland is found throughout the SEA.

Corresponding MCV communities:

- *Avena* (*barbata, fatua*) (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards (upland mustards) Semi-Natural Herbaceous Stands

- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands

- *Bromus rubens-Schismus* (*arabicus, barbatus*) ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands

- *Centaurea* (*solstitialis, melitensis*) (yellow star-thistle fields) Semi-Natural Herbaceous Stands

- *Lolium perenne* [*Festuca perennis*] (perennial rye grass fields) Semi-Natural Herbaceous Stands

Wildlife

Wildlife populations within the SEA are diverse and abundant due to the region's physiographic diversity, its relative isolation, and its location within and adjacent to the Angeles National Forest. Analysis of invertebrates on any given site is generally limited by a lack of specific data; however, the size of the SEA and diversity of habitats present is considered sufficient to encompass healthy populations of a large number of invertebrate species. Fair numbers of amphibians are expected to be present primarily due to the aquatic and semi-aquatic habitats provided within the numerous drainages and several reservoirs. Reptile abundance and diversity are expected to be characteristic for the habitats present, although areas closer to urban development along the southern boundaries of this SEA are likely to be suppressed due to the edge effect.

Bird use, diversity, and abundance within the SEA are expected to be high for several reasons. In general, this SEA provides habitat for a wide range of shrubland, woodland, forest, and riparian species that occur at varying elevations. In particular, the riparian habitats found in drainages throughout this SEA provide essential habitat for riparian-obligate and riparian-favoring species. In addition, a number of migratory birds use this area to move across the northern portion of the Los Angeles Basin. These include a wide spectrum of birds including song birds, waterfowl, and raptorial species.

Similarly, the mammalian fauna is expected to be very diverse and abundant. Virtually all mammalian species found in the forest (with the exception of Nelson's bighorn sheep (*Ovis canadensis nelsoni*)) are expected to be found in this SEA. Frequent observations of American black bear (*Ursus americanus*) and mountain lion (*Puma concolor*) in foothill communities attest to the range of species expected.

Wildlife Movement

Wildlife movement within the SEA takes on two major forms. First, due to the extreme intervening topography, it is logical to expect considerable movement of wildlife up and down the many sizeable drainages, which course through this SEA and connect the forest interior with foothill areas. The larger the watershed of the drainages, the greater the volume of movement. Consequently, this type of movement occurs on a seasonal and more frequent basis, particularly for large mobile mammals, such as American black bear, mountain lion, coyote (*Canis latrans*), bobcat (*Lynx rufus*) and mule deer (*Odocoileus hemionus*), whose full range of habitat needs are typically met over broad areas.

The second major type of movement occurs across the flanks of the foothills and lower mountains, in an east-west direction. Particularly for riparian-favoring migratory birds, a corridor linking lower elevational riparian habitats in the SEA is expected to be of high use and importance. In addition to providing essential habitat for resident riparian birds, this SEA contains some of the best developed

riparian habitat for birds, which are seasonal visitors to the cismontane region of the County.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The communities include walnut woodland, southern coast live oak riparian forest, southern willow scrub, coastal sage chaparral scrub, and Riversidean alluvial fan sage scrub, which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) RPR 2.2
- Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) RPR 1B.2
- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Smooth tarplant (*Centromadia pungens* ssp. *laevis*) RPR 1B.1
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) RPR 1B.1

- White-bracted spineflower (*Chorizanthe xanti* var. *leucotheca*) RPR 1B.2
- Slender-horned spineflower (*Dodecahema leptoceras*) FE, SE, RPR 1B.1
- San Gabriel Mountains dudleya (*Dudleya densiflora*) RPR 1B.1
- Many-stemmed dudleya (*Dudleya multicaulis*) RPR 1B.2
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) RPR 1A
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1
- Jokerst's monardella (*Monardella australis* ssp. *jokerstii*) RPR 1B.1
- Rock monardella *(Monardella viridis* ssp*. saxicola)* RPR 4.2
- Prostrate vernal pool navarretia (*Navarretia prostrata*) RPR 1B.1
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- Salt spring checkerbloom (*Sidalcea neomexicana*) RPR 2.2
- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2
- Rigid fringepod (*Thysanocarpus rigidus*) RPR 1B.2
- Thread-leaved brodiaea (*Brodiaea filifolia*) RPR FT, SE, 1B.1
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- California sawgrass (*Cladium californicum*) RPR 2.2
- California muhly (*Muhlenbergia californica*) RPR 4.3

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- California diplectronan caddisfly (*Diplectrona californica*) CDFG Special Animals List
- Santa Ana sucker (*Catostomus santaanae*) FT, FSS, SSC
- San Gabriel Mountains slender salamander (*Batrachoseps gabrieli*) FSS
- Large-blotched salamander (*Ensatina klauberi*) FSS, SSC
- Northern leopard frog (*Lithobates pipiens*) FSS, SSC

- Sierra Madre yellow-legged frog (*Rana muscosa*) FE, FSS, SSC
- Coast range newt (*Taricha torosa*) SSC
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- San Diego banded gecko (*Coleonyx variegatus abbotti*) CDFG Special Animals List
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- San Bernardino mountain kingsnake (*Lampropeltis zonata parvirubra*) FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Grasshopper sparrow (*Ammodramus savannarum*) CDFG Special Animals List
- Bell's sage sparrow (*Amphispiza belli belli*) BCC, CDFG Watch List
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) BCC, FSS, SSC
- Yellow warbler (*Dendroica petechia brewsteri*) SSC
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- Merlin (*Falco columbarius*) CDFG Watch List
- Yellow-breasted chat (*Icteria virens*) SSC
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Northwestern San Diego pocket mouse (*Chaetodipus fallax fallax*) SSC
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*) FE, SSC
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High

- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Western yellow bat (*Lasiurus xanthinus*) WBWG High
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- Yuma myotis (*Myotis yumaensis*) BLMS, WBWG Low-Medium
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) FSS, SSC
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

Criteria Analysis of the San Dimas Canyon and San Antonio Wash SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	Although the SEA contains rare plant populations, it does not contain a core population of a listed species and therefore does not meet this criterion. The lower slopes in and around San Dimas Canyon support one of the largest populations of the coastal cactus wren in the County, which is a subspecies that is very threatened throughout its range, although not officially recognized by listing.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA contains habitat of the rare rock monardella. In addition, several plant communities within this SEA are CDFG highest priority communities due to their restricted distribution in the Southern California region, including: walnut woodland, oak riparian woodland, southern willow scrub, coastal sage scrub, and alluvial fan scrub.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	All of the plant communities and habitats mentioned as being restricted in distribution on a regional basis, are also restricted in distribution within the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either	Met	The major canyons within this SEA support well-developed and diverse riparian woodlands, as well as a source of perennial water. These represent important stopover and overwintering areas for a wide variety of migratory birds, as well as essential habitat for resident species of fauna and flora. These canyons also support seasonal and more

	regionally or in the County.		frequent movement for wide-ranging mammals, which must move over large areas to fulfill their habitat requirements. The federally-threatened California gnatcatcher has been sighted (2010) in the Glendora foothills, and probably maintains a small population along the lowest slopes of the San Gabriel Mountains.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Not Met	The SEA does not contain biotic resources that are clearly an extreme in physical/geographical limitations, or represent unusual variation in a population or community, and therefore does not meet this criterion. However, the extreme localization of several species of plants in the SEA may indicate geographical processes that are not well understood at this time that merit scientific inquiry.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Virtually all of the native biotic communities within this SEA are relatively undisturbed over most of their extent. Because urbanization throughout much of the County's foothill regions has removed large expanses of these communities, those in the SEA are particularly important to the County's natural heritage.

In conclusion, the area is an SEA because it contains: B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; and F) areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.

San Gabriel Canyon SEA

Location

General

The San Gabriel Canyon Significant Ecological Area (SEA) is located along the cismontane foothills of the eastern section of these mountains. Generally, the SEA is centered on the mouths of three major canyons, which flow from the mountains and interconnecting terrain. From west to east these include, Santa Anita, Monrovia and Sawpit, and San Gabriel canyons, which are located above the cities of Sierra Madre, Arcadia, Monrovia, Duarte, Bradbury, Irwindale, and Azusa. A substantial part of the eastern and southern part of the SEA along the San Gabriel River is in the California Audubon-designated State Important Bird Area (IBA) of the Los Angeles Flood Control Basin IBA. The San Gabriel River has largely been dammed and channelized, but with infrequent clearing of the detention basins and wash areas, substantial parts of the San Gabriel River have reverted to riparian habitat or the even more rare alluvial fan habitat, and this attracts many resident birds, as well as numerous spring and winter migrants.

The SEA is found within the, Mount Wilson, Azusa, San Dimas, and Glendora U.S. Geological Survey (USGS) 7.5' California Quadrangles.

General Boundary and Resources Description

Over most of its boundaries (north, east, and west), the SEA is bordered by open space within the

Angeles National Forest. However, generally to the south, the borders are defined by the edge of urban development within the San Gabriel Valley. The SEA begins in the west at the peak of Mount Wilson within the Angeles National Forest. Traveling east, the northerly boundary follows a major east-west trending ridgeline to Pine Mountain. This ridgeline defines the separation between the watershed of the San Gabriel River West Fork to the north, and the Santa Anita, Sawpit, and lower San Gabriel canyons to the south. These front-range canyons are tributaries of the San Gabriel River.

At Pine Mountain, the boundary turns south to follow the ridgeline that is the western border of the San Gabriel River, and turns east onto a secondary ridge, and descends towards the San Gabriel River near the Morris Reservoir Dam. This easterly boundary crosses the San Gabriel Canyon at Morris Dam and climbs the adjacent ridgeline to Glendora Ridge and the Glendora Ridge Motorway. The southerly boundary follows the motorway to the west, to the point near the mouth of the San Gabriel Canyon where the motorway leaves the ridgeline. The SEA boundary turns north towards the San Gabriel River, and descends to the opening of the San Gabriel Canyon into the Los Angeles Basin. This is between the Glendora Ridge and the mountains near Fish Canyon. The boundary turns along the southeast side of the San Gabriel River floodplain and follows the east side of the San Gabriel River flood control channel. A development near the mouth of Roberts Canyon that is just north of the river mouth has been excluded from the SEA.

In the mouth of the San Gabriel Canyon is a population of the San Gabriel Mountains live-forever (*Dudleya densiflora*), which is unusual in that it has multiple dense flower clusters, whereas other live-forevers have one or several flower stalks with spaced blooms. This live-forever is extremely limited in range and occurs only on the slopes of granitic rubble and canyon walls in the nearby south face of the San Gabriel Mountains. Another population is on private land about one mile upstream of the canyon mouth, on the north-side slope of the Glendora Ridge. Another live-forever population is upstream in nearby Fish Canyon, which is a little downstream of the Fish Canyon Falls. Collections have been made from Mystic Canyon to the east, and Van Tassel Canyon to the west.

The mouth of San Gabriel Canyon and nearby canyons are the principle area for the San Gabriel bedstraw (*Galium grande*), which is another local endemic. The only known populations of the bedstraw and the San Gabriel Mountains live-forever on the planet occur in the County in this small area of the San Gabriel Mountains.

The Los Angeles Flood Control Basin IBA covers all of the SEA in the San Gabriel River and downstream at the Santa Fe Dam Recreation Area. Furthermore, the IBA extends upstream beyond the SEA to the confluence area of the West, North, and East forks of the San Gabriel River in the Angeles National Forest, and it extends downstream beyond Santa Fe Dam to the Whittier Narrows Dam.

A finger of the SEA extends along the San Gabriel River, south of its confluence area with Fish and Van Tassel canyons to pass under the Interstate-210. The finger boundary enlarges around the Santa Fe Flood Control Basin and Recreation Area to include one of the last remaining natural alluvial fan habitats in the County. The Santa Fe Flood Control Basin is one of the most unusual vegetation habitats in the County, and has special sensitive species, as described below in the Vegetation section.

The main SEA boundary continues just west of the Van Tassel Canyon confluence along the north side of the Encanto Equestrian Center, along the northern extent of development in the City of Duarte. A lobe of the SEA encloses the natural habitat of the steep watershed areas of Spinks and

Maddox canyons, extending to the edge of development in the City of Bradbury. The ridge bordering the southeast side of Bliss Canyon is the western edge of the lobe, and the boundary crosses Bliss Canyon at its upper end near the Van Tassel Truck Trail. At this point the boundary of the SEA has reentered the Angeles National Forest. After crossing Bliss Canyon, the boundary follows the southern ridgeline of Spanish Canyon westward to cross out of the Angeles National Forest, tracking around the northern arm of the City of Monrovia. The Sawpit Debris Basin is included in the SEA as is the undeveloped part of Monrovia Canyon Park. To the west of Monrovia Canyon, a lobe of the SEA extends along the undeveloped ridges of the San Gabriel Mountains bordered by the urban edges of the City of Monrovia and City of Arcadia. These communities extend into the mountains where the cities have municipal water rights. The southern boundary skirts the edge of development in Santa Anita Canyon, but includes the Santa Anita Debris Basin, Arcadia Natural Park, Big Santa Anita Dam and Reservoir, and the Santa Anita Canyon stream course above the Dam, which has numerous lease-hold cabins north of the 1600 feet elevation contour. The boundary reenters the Angeles National Forest just north of Arcadia Natural Park.

The southern ridge of Sawpit Canyon, from its dam to about a 0.5 mile upstream has a population of the endangered San Gabriel bedstraw (*Galium grande)*, which is an endemic species of highly restricted distribution. It occurs only on the south slopes of the western section of the San Gabriel Mountains.

Within the SEA, just to the south of Arcadia Natural Park is a Santa Anita Canyon tributary, Clamshell Canyon. On the south banks and ridge of Clamshell Canyon is critical habitat for the federally-endangered Braunton's milk-vetch (*Astragalus brauntonii*), which is a locoweed that prefers interbedded sandstone and carbonate substrate, probably deposited near the coastline of former oceans. Very limited areas of this substrate occur at the boundary of the San Gabriel Mountains in this area. Most of the rocks of the San Gabriel Mountains are igneous granites and metamorphic rocks.

Santa Anita Canyon has some stands of Pacific madrone (*Arbutus menziesii*), which is a plant known elsewhere from the Pacific coast north of Santa Barbara to British Columbia. The Santa Anita stands are isolated occurrences, which is one of the few places madrone is found between Santa Barbara and Baja California.

Near the confluence with Winter Creek in the vicinity of Chantry Flats, the southern boundary of the SEA turns west and climbs the southern ridgeline of Winter Creek, including Winter Creek watershed in the SEA and excluding San Olene Canyon on the south. The boundary follows the ridgeline, marking the southern limits of the Winter Creek watershed to Mount Harvard, and then travels along the Harvard ridgeline to Mount Wilson.

The SEA is comprised of three major canyons: San Gabriel, Sawpit, and Santa Anita. In general, the topography of the SEA is severe, consisting of steep-walled canyons and narrow ridgelines. Elevations range from a high of approximately 5,710 feet above mean sea level (MSL) at Mount Wilson, to a low of approximately 660 feet above MSL in San Gabriel Canyon. Numerous drainages and tributaries of the main canyons are included in the SEA and exit the San Gabriel Mountains into the Los Angeles Basin through this SEA.

The wide range of elevation, topography, slope aspect, and geology represent a wide array of physical habitats within this SEA. Consequently, a number of plant communities exist, including grasslands, riparian, shrublands, woodlands, and forests. Within these major community types, there are many sub-communities, which vary according to plant species dominance. Of particular note,

this SEA contains the last remaining relatively well-developed lower montane riparian habitats in the eastern County and dammed drainages that have created significant reservoirs or flood control basins in Sawpit and Santa Anita canyons. Enclaves of sensitive plant species and vegetation habitats are found here. Other jurisdictions within the SEA include the unincorporated area of the County, the City of Arcadia, City of Monrovia, City of Bradbury, City of Irwindale, City of Duarte, City of Azusa, and the City of Glendora.

Vegetation

There are numerous special vegetation habitats in this SEA. By virtue of elevation, rugged topography of ridges and canyons, variation in aspect due to faulting, and contiguous high elevation areas in the San Gabriel Mountains, this SEA has numerous habitats that are not represented in many or sometimes any of the other SEAs. The coniferous forests, oak tree forests, canyon floras, and various kinds of chaparral contribute to a multitude of habitat types. Some of the very special areas mentioned briefly here are the Santa Fe Dam Recreation Area, which is on an alluvial fan, the canyons that debouche onto the alluvial fans of the Los Angeles Basin, and populations of rare and uncommon species that occur throughout the SEA area.

The floodplain of the San Gabriel River behind Santa Fe Dam supports one of the last examples of alluvial fan, which was once found all along the San Gabriel Mountains where the numerous canyon outwash areas cross the thrust faults that create the mountains, and deposit their sediment loads onto the floor of the Los Angeles Basin. The alluvial fan vegetation supports a community of organisms that is disappearing from the County. It has plant species that are now unusual on the coastal side of the San Gabriel Mountains and uncommon in the Los Angeles Basin, such as California juniper (*Juniperus californica*), white alder (*Alnus rhombifolia*), and the stands of native cactus *Opuntia littoralis* (prickly pear) and *O. parryi* (cholla). It also has many native plants from the alluvial fan community that are still common along the mountain front. This habitat has been largely displaced by urbanization and flood control projects. The bajada, or connected fans, once enabled wildlife movement all along the face of the San Gabriel Mountains and connected the canyon communities with one another. The soft-bottomed channel of the San Gabriel River connects the Santa Fe Recreation area with the San Gabriel Mountains, and the willow- and mulefat-dominated riparian scrub provides the natural base for the community along the river and around the Santa Fe Dam Reservoir. The avian fauna here is very sensitive and directly related to the vegetation that occurs. One of the County's biggest populations of the state and federally-endangered least Bell's vireo (*Vireo bellii pusillus*) occurs and nests at the Santa Fe Dam Recreation area, as well as in other debris basins that have naturally-regenerated growth of willows and other riparian shrubs, where basins that are not scoured by too often. A species of special concern, the yellow-breasted chats (*Icteria virens*) prefer the elderberry and mulefat thickets. Fully-protected white-tailed kites (*Elanus leucurus*) hunt over the low-profile, expansive fan vegetation. The very sensitive coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*), extirpated in most of the County, can breed in the cholla and prickly-pear cactus thickets of the alluvial fan area. Uncommon riparian species, such as rock wren (*Salpinctes obsoletus*), yellow warbler (*Dendroica petechia brewsteri*), and willow goldfinch (*Spinus tristis salicamans*) are frequently encountered in the riparian areas of the Santa Fe Dam Recreation Area.

Special sensitive plants that are extremely localized are found in this SEA. These include the San Gabriel bedstraw and the San Gabriel live-forever. The critical habitat of the endangered Braunton's milk-vetch along Clamshell Canyon is noted. The Pacific madrone in Santa Anita Canyon is an example of what is probably a lone occurrence in the County. There may be other plants like the madrone in botanically-unexplored areas of the rugged front-range of the San Gabriel Mountains in

this SEA.

The variety of topography, soil types, slope aspects and water availability within the SEA creates a range of physical habitats, which support numerous plant species. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Brief descriptions and general locations of each major plant community present within the SEA are provided below, including bigcone Douglas fir-canyon oak forest, white alder riparian forest, alluvial fan scrub, oak woodland, oak riparian forest, walnut woodland, southern willow scrub, chaparral, coastal sage scrub, and non-native grassland.

Bigcone Douglas Fir–Canyon Oak Forest: An open to dense forest dominated by bigcone Douglas fir (*Pseudotsuga macrocarpa*) 50 to 80 feet tall over a dense canopy of canyon live oak (*Quercus chrysolepis*). It is found scattered throughout the SEA on canyon sides at elevations generally above 2,500 feet where it occupies rocky substrates. It commonly occurs in fairly small enclaves within chaparral.

Corresponding MCV communities:

- *Pseudotsuga macrocarpa* (bigcone Douglas-fir forest) Forest Alliance
- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance

White Alder Riparian Forest: Along the upper reaches of many drainages in the SEA, white alder riparian forest is found. This community is dominated by white alder (*Alnus rhombifolia*), which grow 30 to 40 feet high over a shrub understory. It typically grows along streams in bedrock-constrained, steep-sided canyons, resulting in a fairly narrow riparian corridor.

Corresponding MCV communities:

- *Alnus rhombifolia* (white alder groves) Forest Alliance

Alluvial Fan Scrub: A shrub community characterized by harsh substrates subject to episodic flooding and scouring. It is generally restricted to broad canyon outwashes, or alluvial washes. It is found in this SEA at the San Gabriel Canyon mouth where it forms an open, shrub-dominated vegetation within areas of bare, scoured ground in between.

Corresponding MCV communities:

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance
- *Malosma laurina* (laurel sumac scrub) Shrubland Alliance

Oak Woodland: A plant community dominated by species of the oak genus (*Quercus*). Within this SEA, this community includes coast live oak (*Q. agrifolia* var. *agrifolia*), which typically grows to heights of 20 to 40 feet and the somewhat smaller interior live oak (*Q. wislizenii*) and canyon oak, and forms either closed or open tree canopies. Understory vegetation varies from grassland in level areas to shrubs where topography is steeper. It may also intergrade with shrub communities. Within this SEA oak woodland is scattered throughout and most prevalent on north-facing slopes and in drainage bottoms.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Quercus engelmannii* (Engelmann oak woodland) Woodland Alliance

Oak Riparian Forest: A highly related community to oak woodlands found in the SEA. This community is also dominated by coast live oak (or canyon oak at higher elevations). The primary difference between oak woodland and oak riparian forest is the greater availability of water in riparian situations, which is expressed in a denser tree canopy and higher density of trees. There are also a greater number of hydrophytic (moister favoring) plant species in the understory. Typical riparian trees, such as western sycamore (*Platanus racemosa*) and willow (*Salix spp.*) occasionally occur. Oak riparian forest is best developed within broader, more level gradient drainages of this SEA.

Corresponding MCV communities:

- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance

Walnut Woodland: Often intergrades with oak dominated woodlands or develops as a distinct community. This community is dominated by Southern California black walnut (*Juglans californica*), which grows 10 to 30 feet high. More often than not, walnut woodland in this SEA is highly intermixed with oak woodland and chaparral, and large monotypic stands are uncommon.

Corresponding MCV communities:

- *Juglans californica* (Southern California black walnut groves) Woodland Alliance

Southern Willow Scrubs: Found along widely scattered reaches of several drainages throughout this SEA. This community is dominated by species of willow, which form nearly monotypic stands due to their dense growth with an occasional cottonwood. These stands generally reach 10 to 20 feet in height with little understory vegetation.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Chaparral: A shrub community composed of robust species. Within this SEA, a number of chaparral subcommunities are found, which are differentiated by their dominant plant species. These include chamise, buck brush (*Ceanothus* spp.), scrub oak (*Quercus durata* var. *gabrielensis*), interior shrub live oak (*Quercus wislizeni* var. *frutescens*), and mosaics of these depending on mixtures of species

and elevation. These and other shrub species form dense vegetation covers growing 5 to 10 feet in height. The development of chaparral is pronounced over large hillside areas throughout the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Arctostaphylos glandulosa* (chamise chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus greggii* [*Ceanothus vestitus*] (cup leaf chaparral) Shrubland Alliance
- *Ceanothus leucodermis* (chaparral whitethorn) Shrubland Alliance
- *Ceanothus spinosus* (greenbark ceanothus chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Coastal Sage Scrub: A shrubland community exhibiting less robust structure found in this SEA. This plant community is dominated by California sagebrush (*Artemisia tridentata*), California brittle bush (*Encelia californica*), white sage (*Salvia apiana*), black sage (*S. mellifera*), and California buckwheat (*Eriogonum fasciculatum*). It also forms dense stands, which grow three to four feet in height. Within this SEA, it is generally found in scattered patches, which are highly integrated with mixed chaparral. These are primarily located in the lower elevation hillsides of the SEA.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance

- *Eriogonum cinereum* (ashy buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Eriogonum wrightii* (Wright's buckwheat patches) Shrubland Alliance
- *Ericameria linearifolia* (narrowleaf goldenbush scrub) Provisional Shrubland Alliance
- *Hazardia squarrosa* (sawtooth golden bush scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Lupinus albifrons* (silver bush lupine scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Non-Native Grassland: Dominated by non-native annual grasses and forbs. These opportunistically growing species include brome grasses, wild oats and mustards. Characteristic of other parts of Southern California, this community became established as a result of livestock grazing and agriculture, as native vegetation is removed, sometimes by mechanical means, and replaced by more opportunistic species. Non-native grassland is found throughout the SEA.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) (wild oats grasslands) Semi-Natural Herbaceous Stands

Wildlife

Wildlife populations within the SEA are diverse and abundant due to the region's physiographic diversity, its relative isolation, and its location within and adjacent to the Angeles National Forest. The analysis of invertebrates is severely limited due to the lack of specific data, however, the SEA is likely to support healthy populations of a diverse assortment of invertebrate species based on the its undisturbed nature and variety of habitats. Fair numbers of amphibians are expected to be present primarily due to the aquatic and semi-aquatic habitats provided within the numerous drainages and several reservoirs. Reptile abundance and diversity are expected to be characteristic for the habitats present, although areas closer to urban development along the southern boundaries of this SEA are likely to be suppressed due to edge effect.

Bird use, diversity, and abundance within the SEA are expected to be high for several reasons. In general, this SEA provides habitat for a wide range of shrubland, woodland, forest, and riparian species that occur at varying elevations. In particular, the riparian habitats found in drainages throughout this SEA provide essential habitat for riparian-obligate and riparian-favoring species. In addition, a number of migratory birds use this area to move across the northern portion of the Los Angeles Basin. These include a wide spectrum of birds including song bird, waterfowl, and raptorial species.

Similarly, the mammalian fauna is expected to be very diverse and abundant. The vast open space of the Angeles National Forest and its diversity of habitats exerts much influence on the great variety

of taxa in this SEA. Virtually all mammalian species found in the forest (with the exception of Nelson's bighorn sheep (*Ovis canadensis nelsoni*)) are expected to be found in this SEA. Frequent observations of American black bear (*Ursus americanus*) and mountain lion (*Puma concolor*) in foothill communities attest to the range of species expected.

Wildlife Movement

Wildlife movement within the SEA takes on two major forms. First, due to the extreme intervening topography, it is logical to expect considerable movement of wildlife up and down the sizeable drainages, which course through this SEA to connect the forest interior with foothill areas. Consequently, this type of movement occurs on a seasonal and more frequent basis, particularly for large mobile mammals whose full range of habitat needs are typically met over broad areas, including American black bear, mountain lion, coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), gray fox (*Urocyon cinereoargenteus*) and other medium-sized mammals.

The second major type of movement occurs across the flanks of the foothills and lower mountains, in an east-west direction. Particularly for riparian-favoring migratory birds, a corridor linking lower elevation riparian habitats in the SEA is of high use and importance. In addition to providing essential habitat for resident riparian birds, this SEA contains some of the best developed riparian habitat for birds, which are seasonal visitors to the cismontane region of the County.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The Braunton's milk-vetch has critical habitat in this SEA.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include bigcone Douglas-fir forest, California buckwheat-white sage scrub, scale broom scrub, Engelmann oak woodland, Southern California black walnut groves, chamise-white sage chaparral, cup leaf ceanothus chaparral, hairy leaf ceanothus chaparral, holly leaf cherry chaparral, California brittle bush scrub, white sage scrub, ashy buckwheat scrub, Wright's buckwheat patches, narrowleaf goldenbush scrub, and sawtooth golden bush scrub. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Slender silver moss (*Anomobryum julaceum*) RPR 2.2
- Scalloped moonwort (*Botrychium crenulatum*) RPR 2.2
- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) RPR 2.2
- San Gabriel manzanita (*Arctostaphylos glandulosa* ssp. *gabrielensis*) RPR 1B.2
- Braunton's milk-vetch (*Astragalus brauntonii*) FE, RPR 1B.1
- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) RPR 1B.1
- Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*) RPR 2.2
- Slender-horned spineflower (*Dodecahema leptoceras*) FE, SE, RPR 1B.1
- San Gabriel River dudleya (*Dudleya cymosa* ssp. *crebrifolia*) RPR 1B.2
- San Gabriel Mountains dudleya (*Dudleya densiflora*) RPR 1B.1
- Many-stemmed dudleya (*Dudleya multicaulis*) RPR 1B.2
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) RPR 1B.2
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- Parish's gooseberry (*Ribes divaricatum* var. *parishii*) RPR 1A
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2

- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Thread-leaved brodiaea (*Brodiaea filifolia*) FT, SE, RPR 1B.1
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Palmer's mariposa lily (*Calochortus palmeri* var. *palmeri*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Intermediate mariposa lily (*Calochortus weedii* var. *intermedius*) RPR 1B.2
- Western sedge (*Carex occidentalis*) RPR 2.3
- California sawgrass (*Cladium californicum*) RPR 2.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- California satintail (*Imperata brevifolia*) RPR 2.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Santa Ana sucker (*Catostomus santaanae*) FT, SSC
- Arroyo chub (*Gila orcuttii*) SSC
- Santa Ana speckled dace (*Rhinichthys osculus* ssp. 3) SSC
- Arroyo toad (*Anaxyrus californicus*) FE, SSC
- San Gabriel Mountains slender salamander (*Batrachoseps gabrieli*) FSS
- Large-blotched salamander (*Ensatina klauberi*) FSS, SSC
- Sierra Madre yellow-legged frog (*Rana muscosa*) FE, FSS, SSC
- Coast range newt (*Taricha torosa*) SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC

- Cooper's hawk (*Accipiter cooperii*) CDFG Watch List
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) SSC, FSS, BCC
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, BCC, FSS, SE
- Black swift (*Cypseloides niger*) BCC, SSC, USBC, AWL, ABC
- Yellow warbler (*Dendroica petechia brewsteri*) SSC, BCC
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- Merlin (*Falco columbarius*) CDFG Watch List
- Yellow-breasted chat (*Icteria virens*) SSC
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Bank swallow (*Riparia riparia*) ST
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Western yellow bat (*Lasiurus xanthinus*) WBWG High
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- Fringed myotis (*Myotis thysanodes*) BLMS, WBWG High
- Long-legged myotis (*Myotis volans*) BLMS, SSC, WBWG Medium
- Yuma myotis (*Myotis yumaensis*) BLMS, WBWG Low-Medium
- Pocketed free-tailed bat (*Nyctinomops femorosaccus*) SSC, WBWG Medium
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The SEA contains a core habitat area for the endangered plant Braunton's milkvetch. The upper San Gabriel River is a core habitat of several native fishes, one of the last areas where three of five original natives occur together: federally-threatened Santa Ana sucker, and the arroyo chub and Santa Ana speckled dace,which is of state concern. All three live in the San Gabriel River in the SEA area. A local population of the speckled dace is known from the mouth of Fish Canyon. The very rare San Gabriel bedstraw and San Gabriel Mountains live-forever only occur in this area of the world.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA contains habitat of extremely rare plants: San Gabriel bedstraw and the San Gabriel Mountains dudleya. In addition, several plant communities within this SEA are CDFG highest priority communities due to their restricted distribution in the Southern California region. These communities include walnut woodland, oak riparian woodland, southern willow scrub, coastal sage scrub, and alluvial fan scrub. The federally-endangered California gnatcatcher has been recently sighted in the Glendora foothills, and probably maintains a small population along the lowest slopes of the San Gabriel Mountains.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	All of the plant communities and habitats mentioned as being restricted in distribution on a regional basis, are also restricted in distribution within the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The three major canyons within this SEA support well-developed and diverse riparian woodlands, as well as year-round water sources. These represent important stopover and overwintering areas for a wide variety of migratory birds, as well as essential habitat for resident species. These canyons also support seasonal and more frequent movement for wide-ranging mammals, which must move over large areas to fulfill their habitat requirements.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The SEA contains biotic resources that are of scientific interest for their very restricted distributions: the San Gabriel bedstraw, the San Gabriel Mountains live-forever, and a local isolated population of the Pacific madrone. The population of Santa Ana speckled dace in Fish Canyon may be the remaining extreme western extent of its population.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Virtually all of the native biotic communities within this SEA are relatively undisturbed over most of their extent. Because urbanization throughout much of the County's foothill regions has removed large expanses of these communities, those in the SEA are particularly important to the County's natural heritage.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; E) populations of scientific interest because of very restricted distributions and isolated populations; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Santa Clara River SEA

Location

General

The Santa Clara River Significant Ecological Area (SEA) extends along the entire County reach of the Santa Clara River, primarily within unincorporated areas of the County. The SEA encompasses a wide variety of topographic features and habitat types, as well as major tributaries—all of which contribute to this diversity. It is a major biotic corridor for the County (and Ventura County). The orientation and extent of the SEA depends upon the surface and subsurface hydrology of the Santa Clara River, from its headwaters, tributaries, and watershed basin, to the point at which it exits the County's jurisdiction. Nearly all of the SEA is designated by California Audubon as a Globally Important Bird Area (IBA). The Santa Clara River IBA extends beyond the SEA in both upstream and downstream directions (across Soledad Pass to the Barrel Springs area in the Antelope Valley and through Ventura County to the mouth of the River at the Pacific Ocean).

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Pacifico Mountain, Acton, Agua Dulce, Sunland, San Fernando, Mint Canyon, Oat Mountain, Newhall, and Val Verde.

General Boundary and Resources Description

The SEA covers a wide variety of topographic features and habitat types, including parts of the watershed tributaries. The biological and ecological functionality of the SEA is integrally linked to the Santa Clara River basin for its entire length. The bio-geographic limits of the SEA would extend downstream through Ventura-Los Angeles County line to its mouth at the Pacific Ocean, and encompass significant tributary drainages of Ventura County (Piru Creek, Sespe Creek, Santa Paula Creek, Wheeler Creek, etc.).

The eastern portion of the SEA follows natural contours at the headwaters of the watershed to incorporate much of upper watershed of Soledad Canyon (which becomes the Santa Clara River), the Kentucky Springs and the Aliso Canyon basins, and the downstream unnamed tributaries of the Santa Clara River to Arrastre Creek. This includes the watershed southern headwater areas within the Angeles National Forest. The headwaters of both Kentucky Springs and Aliso Canyon are in the Angeles National Forest, in semi-arid chaparral and desert scrub habitat; however, the drainages themselves support vegetation of desert and interior riparian habitat, which ranges from Great Basin sagebrush in Kentucky Springs Wash to dense, mature, willow-cottonwood-sycamore woodlands along permanent streams in Aliso Canyon. The surrounding uplands in the basins support pinyon-juniper woodlands, chamise, mountain mahogany, and manzanita-dominated chaparral, buckwheat scrub, and ruderal lands. The alluvial plain formed along the southern margin of the Santa Clara River basin below these canyons supports intact, high diversity xeric alluvial fan sage scrub. Alluvial terraces within both drainages have been extensively cultivated for orchard crops and dryland

agriculture, and in more recent years, rural and urban-type residential developments have encroached on the watersheds. The Kentucky Springs basin has a large population of Parish's Great Basin sagebrush (*Artemisia tridentata* ssp. *parishii*), which is considered rare and sensitive in the County. A population of the federally-threatened red-legged frog (*Rana draytonii* FT, SC) is known to inhabit and breed in the Aliso Canyon watershed. Blum Ranch and another area on Aliso Canyon Road are disturbed, with farming development, but important to continuity of the SEA. The Santa Clara River IBA extends in a branch upstream to include Blum Ranch.

The boundary follows the Santa Clara River channel downstream through the Acton basin, paralleling Soledad Canyon Road on the north side, following the toe of the slope of the San Gabriel Mountains to the south. Boundaries continue along the channel margins to the southwest from Acton to Arrastre Creek, where the southern boundary follows watershed contours to take in four upper tributary channels (Arrastre, Moody, and Bootleggers). Downstream from Acton, there are developed areas as along the Santa Clara River. From a little upstream of the Arrastre Creek confluence to a little downstream in the vicinity of the railroad stop of Lang (about 13 miles of river), the floodplain of the Santa Clara River is designated critical habitat for the federally-endangered arroyo toad (*Anaxyrus californicus*). Some of the confluence area of Mill Canyon is also critical habitat for the arroyo toad. Part of the area of critical habitat for the toad was also proposed as critical habitat for the state and federally-endangered unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*), which is a small three-inch fish that essentially only occurs in the County. It once was widespread throughout the Los Angeles Basin and beyond, but is now restricted to the upper Santa Clara River. The proposal for critical habitat was never approved, and this is now referred to as "essential habitat" for the fish. The type area for the fish is the Arrastre Creek, where it was first collected and described with a museum specimen.

The habitat along the Santa Clara River supports the largest community of riparian-obligate birds between Santa Ynez River in Santa Barbara County and the Prado Basin in Riverside County. In the Soledad Canyon stretch are breeding summer tanager (*Piranga rubra*) and other desert species, along with some instances of least Bell's vireos (*Vireo bellii pusillus*), coastal cactus wrens (*Campylorhynchus brunneicapillus sandiegensis*), and southwestern willow flycatchers (*Empidonax traillii extimus*) from the coastal influence areas. The area is notable for having a combination of species that are characteristic of the desert and characteristic of coastal-influence.

Just west of the confluence with Arrastre Creek the northern boundary loops up to the slopes of Parker Mountain and the eastern watershed of Hughes Canyon around the basal contours of significant rock outcroppings above the river basin, and on the south side, around the Mill Canyon tributary basin. The rocky buttes on the north side of the river, while only a minor part of the watershed of the river, provide important nesting, roosting, and sheltering habitat values for bats, birds of prey, and other sensitive species foraging along the river corridor. The boundaries stay at the river margins west to the watersheds of two northern tributaries, Nellus and Bobcat canyons. These drainages were identified by the South Coast Wildlands Project as important to connectivity across the Santa Clara River between the western and eastern highland areas of the San Gabriel Mountains.

At the Agua Dulce Canyon drainage, the northern boundary loops around the watershed, including the Vasquez Rocks County Natural Area. Agua Dulce Canyon has a permanent stream and supports high quality riparian habitat from the confluence with the river to the intersection with State Route-14. The Santa Clara River IBA extends upstream to include about one mile of the Agua Dulce Canyon.

The Agua Dulce underpass of State Route-14 is an important crossing of the highway barrier for wildlife. From that point, north riparian areas exist where the creeks (Agua Dulce and Escondido) pass through Vasquez Rocks County Natural Area. The Agua Dulce Canyon extension was included in the SEA for its value as a wildlife corridor to provide connectivity across the Santa Clara River between the western and eastern highland areas of the San Gabriel Mountains. The extension includes the watershed of Bee Canyon, which is a downstream tributary of the Santa Clara River. Bee Canyon has an important population of the federally-endangered slender-horned spineflower (*Dodecahema leptoceras*) in its broad, floodplain area. In the Bee Canyon slopes of coastal sage chaparral, the federally-threatened coastal California gnatcatcher (*Polioptila californica californica*) is sometimes resident. The Bee Canyon area has some underpasses of the State Route-14 that could be used by smaller wildlife if maintained unclogged. The extension includes upper watersheds of Spring and Tick canyons to enhance the connective area. Beyond upper areas of Tick Canyon, the SEA boundaries cross Mint Canyon into the Angeles National Forest and the watershed of Rowher Canyon. The SEA continues to the upper reaches of Rowher Canyon onto the main ridgeline of the Sierra Pelona. At the Mint Canyon crossing, just southwest of the community of Sleepy Valley, a lobe of the SEA extends along Mint Canyon to capture riparian woodlands of coast live oak, with a number of heritage trees (diameters greater than 36 inches). Residences are scattered and the natural communities of chaparral are intact on the canyon slopes.

The southern boundary of the SEA opposite the confluence with Agua Dulce Canyon includes the flood plain. The SEA dips southward into the lower portion of Bear Canyon (tributary of Santa Clara River) and includes undeveloped alluvial terrace slopes of the river downstream of Bear Canyon. The flood plain is a narrowed part of the SEA in the vicinity of Lang, which is a railroad stop on the transcontinental railroad line that runs the length of the Soledad Canyon. Downstream from Lang, the SEA expands to the southern slopes between Lang and Oak Spring Canyon, adjacent to the river channel. Downstream of Oak Canyon, the SEA narrows to the flood plain, passes Sand Canyon, and reaches the west ridge of Sand Canyon. A broad finger of the SEA goes south along the ridgeline of the Sand Canyon watershed, where the finger expands when it reaches the watershed of Placerita Canyon.

The alluvial fans of Oak Springs Canyon and Sand Canyon are important recharge grounds for the river aquifer. Surface flows from both canyons enter the Santa Clara River basin through natural, unconfined channels. Recognizing the importance of the Sand Canyon drainage, the SEA boundaries are drawn to encompass the entire upper Sand Canyon watershed, which is largely natural with scattered residences, as well as the Sand Canyon tributary, Bear Canyon. Most of the upper Sand Canyon and its Bear Canyon tributary are within the Angeles National Forest, and Sand Canyon originates on the peak of Magic Mountain. These canyons form a natural movement zone for wildlife traversing among the western end of the San Gabriel Mountains, the eastern end of the Santa Susana Mountains, and the Santa Clara River basin. Together, they encompass a spectrum of significant and unique habitat, vegetation and wildlife resources. The major habitat linkage zones and watersheds between the river basin and the Angeles National Forest, and the protected areas of the County (Placerita Canyon Natural Area), have also been included within the SEA boundary. Near the peak of Magic Mountain, the boundary contours to the southwest, and then proceeds west along the Santa Clara Divide to its intersection with the junction of Interstate-5 and State Route-14. Natural areas of the Sand Canyon watershed, along with the major topography of ridgelines, earthquake escarpments, grasslands, and canyon habitat features and watersheds of Bear, Placerita, Whitney, and Elsmere canyons are the important features of the wildlife linkage. Existing rural residential developments are excluded from the SEA, but the remaining natural highland areas of the western banks of the Sand Canyon watershed are included. These are integral parts of the river basin recharge system and functional ecosystem.

Parts of this area have coastal sage scrub and are critical habitat for the threatened coastal California gnatcatcher. The watershed of Placerita Canyon southeast of the State Route-14 is generally critical habitat for the federally-threatened coastal California gnatcatcher. An area of development surrounding the Placerita Creek near State Route-14 is excluded from the critical habitat. The critical habitat area for the gnatcatcher extends along the east side of State Route-14 beyond Placerita Creek and envelops watersheds into the Angeles National Forest along Whitney Canyon, Elsmere Canyon, and southward over the main ridge of the San Gabriel Mountains, into Grapevine Canyon in its upper natural watershed. Upper areas of these canyons with oaks and big-cone Douglas fir are habitat for the California spotted owl (*Strix occidentalis*)

The eastern half of the Los Piñetos undercrossing of State Route-14 on old oil development roads is included, and focuses on a major wildlife conduit connecting the Santa Susana Mountains to the San Gabriel Mountains, and to the Santa Clara River. The adjacent part of the Santa Susana Mountains and Simi Hills SEA includes the west half of the Los Piñetos undercrossing of State Route-14, connecting through the natural oak woodlands and drainages adjacent to the San Fernando Pass. This area, once called “San Francisco” or “Newhall Wedge,” is north and west of the junction of Interstate-5 and State Route-14 with The Old Road running through it. The Newhall Wedge area is nearly all critical habitat for the coastal California gnatcatcher. This critical habitat of the Newhall Wedge is adjacent to the gnatcatcher critical habitat across State Route-14 in the SEA, but is in the Santa Susana Mountains and Simi Hills SEA.

The SEA boundary borders State Route-14 from the north ridge of Grapevine Canyon and heads northeast from the Los Piñetos undercrossing, on the natural side of existing development east of State Route-14. The area around development along Running Horse Road off Placerita Canyon has been excluded from the SEA. The movie-shoot ranch at the junction of State Route-14 and Placerita Canyon has much area with development or staging excluded, but there is a connected finger of the SEA in Placerita Canyon that leads to the Placerita Canyon watercourse underpass. Much of the watercourse underpass is used by wildlife to transition between the natural areas of Placerita Canyon and the oil field area on the west side of State Route-14. The SEA narrows to the western hills of Sand Canyon beyond the movie-shoot ranch, to avoid developed areas, and continues back to the river margin at Humphreys railway stop, about a 0.4 mile west of its previous point of departure from the river channel. The boundary was drawn to avoid existing major development, but connect the uplands to the river basin. The narrow aperture for the linkage at the Santa Clara River reflects the remnant nature of the last unobstructed terrestrial passageway between the upland areas and the river.

From Sand Canyon westward through the residential neighborhoods of Santa Clarita, the SEA boundary continues on the margins of the flood plain to the confluence with San Francisquito Canyon. The segment of the Santa Clara River passing through the City of Santa Clarita is a dry channel, except during seasonal runoff flows. Some irregular extensions go north into tributaries that have remnant riparian habitat and probable outflows from irrigation runoff that flows into neighborhood storm drains. Regardless of the intermittent nature of water, the river bed elevated areas among braided channels support relatively intact stands of alluvial sage scrub, riparian woodland, and southern riparian scrub. The dry zones are essential to the continued genetic isolation and integrity of the unarmored three-spine stickleback population in the upper reaches of the Santa Clara River.

The boundary extends northward upstream into the reaches of San Francisquito Creek (formerly a separate SEA, but now included with the SEA), following the approved development setback limits, north into the Angeles National Forest (Santa Clara/Mojave Rivers District). The SEA continues

nearly the length of the San Francisquito Creek to beyond the junction with South Portal Creek in the vicinity of the community of Green Valley. The Santa Clara River IBA extends in a branch upstream in close proximity to the crossing of Copper Hill Drive.

As the channel enters the Angeles National Forest, flows become less seasonal, and riparian resources expand and diversify. San Francisquito Creek supports dense and mature southern riparian scrub and riparian woodland formations, along with small areas of freshwater marsh, which provide essential wintering areas and resident habitat for waterfowl, wading birds, marshland birds, and a variety of other vertebrate species. The headwaters of San Francisquito Creek are on a low ridge that bounds the San Andreas Fault Zone, and this is an important connective element of the SEA, in that it completes the path from the Pacific Ocean through the mountains to the Mojave Desert. The sub-watershed and flood plain of the San Francisquito Creek perennial flow in the Angeles National Forest jurisdiction is designated critical habitat for the federally-threatened red-legged frog, which extends from about the Angeles National Forest southern boundary to about one mile south of the junction with Bee Canyon. Much of the San Francisquito Creek is considered essential habitat (one of three areas) for the endangered unarmored threespine stickleback, although the fish has not been found in the San Francisquito Canyon in recent years.

The boundaries west of the confluence with San Francisquito Creek follow the river margins under the Interstate-5 to the Castaic Creek confluence, at which point the northern setback line has been drawn around the lower portion of Castaic Creek, which embraces the riparian habitat areas around and above the confluence. Castaic Creek is the tributary with the largest watershed for the Santa Clara River in the County. The SEA boundaries go upstream about four miles along the watercourse of Castaic Creek to the crossing of Lake Hughes Road, which is just downstream of Castaic Lagoon. The Santa Clara River IBA extends in a branch upstream into Castaic Creek for approximately one mile.

Relatively extensive areas of willow-cottonwood forest and southern riparian scrub occur west of San Francisquito Creek and within the junction zone of Castaic Creek and the Santa Clara River. These river forests support numerous sensitive species and provide multi-layered riparian habitat for a wide diversity of wildlife species, particularly birds of prey and riparian-obligate song birds, such as the federally-endangered least Bell's vireo (*Vireo bellii pusillus*) and the southwestern willow flycatcher (*Empidonax traillii extimus*).

Federally-designated critical habitat for the endangered arroyo toad extends from the east side of Interstate-5, from the junction of the Santa Clara River with San Francisquito Creek, under the Interstate-5, about 5.8 miles to the confluence, with an unnamed drainage just upstream of the confluence of the river with San Martinez Chiquito. The critical habitat area for the toad also includes the flood plain of Castaic Creek as far upstream as the Interstate-5 undercrossing (about 2.5 miles), and for about one mile upstream into the natural area of Hasley Canyon, a tributary of Castaic. Coincident with the critical habitat for the toad is critical habitat for the endangered least Bell's vireo (FE, SE). Critical habitat for the vireo extends along the floodplain from the Rye Canyon undercrossing of the river (west side of Interstate-5), over the Ventura-Los Angeles County line, to about a mile short of the confluence of the Santa Clara River with Piru Creek in Ventura County (about 9 miles). The river area from near Interstate-5 towards the Ventura-Los Angeles County line is "essential habitat" for the threespine stickleback. A disjunct SEA area is on a ridge south of the river bend at Castaic Junction (interchange of Interstate-5 and State Route-126). This area supports a population of the federal candidate and state-endangered San Fernando Valley Spineflower (*Chorizanthe parryi* var. *fernandina*, FC, SE), which is a diminuitive, once-common flower of slopes within the San Fernando Valley and adjacent passes and mountain ranges. The plant became so

rare that it was believed to be extinct until it was rediscovered during required surveys for development.

Beyond the confluence with Castaic Creek, the boundaries of the SEA follow the margins of the Santa Clara River channel to the Ventura-Los Angeles County line. The Santa Clara River IBA has a lobelike expansion opposite the confluence with San Martin Chiquito, extending south to cover diverse topography from river cliffs to confluence flood plains in the area around Potrero Canyon.

The Santa Clara River channel and its alluvial terraces and tributary creeks together form the single most important and natural wildlife movement zone through the County. Mobile species can enter the river basin anywhere along its length (outside of developed areas) and proceed in either direction without having to pass through narrow culverts or blind channels, with continuous vegetative cover and only short stretches of dry substrates. The overall drainage course provides a continuum of aquatic and terrestrial movement opportunities, shelter, forage, and resident habitat from the mouth of the river at Ventura County and the Pacific Ocean, to the Antelope Valley. The drainage course connects to both districts of the Angeles National Forest, and links together three large public resource preserves (Vasquez Rocks and Placerita County Natural Areas and the Angeles National Forest).

Vegetation

Plant communities within the SEA include bigcone Douglas fir-canyon oak forest, coast live oak woodland, coast live oak riparian forest, chaparral, coastal sage scrub, coastal sage scrub-chaparral mixed scrub, non-native and native grasslands, alluvial fan sage scrub, southern cottonwood-willow riparian woodland and forest, southern sycamore-alder woodland, southern willow scrub, vernal pool, pinyon-juniper woodland, juniper woodland, freshwater marsh, and disturbed. Transitional zones (ecotones) between these communities often contain unusual species compositions. Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

<u>Bigcone Douglas Fir-Canyon Oak Forest</u>: Typically occurs in higher elevation draws on north-facing slopes, and may have incense cedar (*Calocedrus decurrens*), big-leaf maple (*Acer macrophyllum*), California bay (*Umbellularia californica*), and other shade-loving species intermixed, depending upon slope orientation, substrates, and fire history. Understory vegetation is usually dominated by chaparral species, such as scrub oak (*Quercus berberidifolia*), poison oak (*Toxicodendron diversilobum*), wild grape (*Vitis californica*), and manzanita (*Arctostaphylos* spp.). This community occurs on watershed slopes in the eastern portion of the SEA, and in a few of the narrower, more mesic canyons along the southern side of Soledad Canyon.

Corresponding MCV communities:

- *Pseudotsuga macrocarpa* (bigcone Douglas-fir forest) Forest Alliance
- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance

<u>Coast Live Oak Woodland</u>: Consists of moderate-density overstory formations of coast live oak trees (*Quercus agrifolia* var. *agrifolia*), usually on erosional plains or landslides along the margins of canyon bottoms and on lower slopes in chaparral and coastal sage scrub understory habitats. Western blue elderberry (*Sambucus nigra* var. *caerulea*), chaparral currant (*Ribes malvaceum*),

skunk bush (*Rhus aromatica*), and California peony (*Paeonia californica*) are frequent in the understory. Extensive stands of this formation occur in Sand, Placerita, Bear, Whitney, Elsmere, and Soledad canyons, and in unnamed tributary canyons to these drainages.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Coast Live Oak Riparian Forest: A variation of coast live oak woodland wherein the canopy is more closely grown, and the trees occur in narrower formations along watercourses. Willow (*Salix* spp.), California bay, mulefat (*Baccharis salicifolia*), and other riparian species often occur in the understory.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Juniper Woodland: An open formation dominated by California juniper (*Juniperus californica*), often with an understory of foothill yucca (*Yucca whipplei*), California buckwheat (*Eriogonum fasciculatum*), and other scrub species. This community is found on lower slopes within the eastern portion of the SEA and is mixed with a few Joshua trees and chaparral species in several places.

Corresponding MCV communities:

- *Juniperus californica* (California juniper woodland) Woodland Alliance

Pinyon-Juniper Woodland: In the SEA, pinyon-juniper woodland typically consists of a mixture of singleleaf pinyon pine (*Pinus monophylla*) and California juniper, with mountain mahogany (*Cercocarpus betuloides*), California buckwheat, skunk bush, foothill yucca, penstemons (*Penstemon* spp.), and native grasses (*Stipa*, *Poa*, *Elymus*, etc.). This formation occurs on middle elevation north-facing slopes in the Kentucky Springs watershed, and sporadically along the same orientations south of Acton.

Corresponding MCV communities:

- *Pinus monophylla* (singleleaf pinyon woodlands) Woodland Alliance

- *Juniperus californica* (California juniper woodland) Woodland Alliance

Southern Cottonwood-Willow Riparian Woodland and Forest: A broad-leafed winter-deciduous habitat dominated by Fremont cottonwood (*Populus fremontii*), various species of willow, and occasional alder (*Alnus rhombifolia*) and western sycamore (*Platanus racemosa*). Southern cottonwood-willow riparian woodland (or forest) occurs in numerous reaches of the SEA, forming mature overstory habitat on the Santa Clara River, its main tributaries, oxbow ponds, and alluvial plains. Some of the most extensive formations occur just west of Acton, in upper Aliso Canyon, in lower San Francisquito Canyon, and from Santa Clarita to the Ventura-Los Angeles County line. Large tracts of cottonwood-willow habitat occur in Ventura County as well.

Corresponding MCV communities:

- *Populus fremontii* (Fremont cottonwood forest) Forest Alliance

- *Salix laevigata* (red willow thickets) Woodland Alliance
- *Salix gooddingii* (black willow thickets) Woodland Alliance

Southern Sycamore-Alder Woodland: A formation that most often occurs on broad plains with heavy alluvial substrates, as well as along narrow creeks and streams with high-energy, permanent flows within the SEA. Alders typically occur along the watercourse, while sycamores usually grow a bit further from the active flowing channel. This community is rare within the SEA, as it occurs in only the upper reaches of the watershed and in portions of Bear, Sand, and Placerita canyons and to a lesser extent in Aliso Canyon.

Corresponding MCV communities:

- *Platanus racemosa* (California sycamore woodlands) Woodland Alliance
- *Alnus rhombifolia* (white alder groves) Forest Alliance

Southern Willow Scrub: is a riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets that occur within and adjacent to seasonal or permanent watercourses. The "scrub" generally is sub-mature, which is a state that often is maintained by frequent heavy over-flooding. The trees attain woodland or forest stature if undisturbed for several decades. Dominant species of this community within the SEA are mulefat, sandbar willow (*Salix exigua*), and arroyo willow (*Salix lasiolepis*). Within the SEA, this community occurs throughout the tributary and primary drainages, wherever the habitat structure is maintained or repeatedly altered by frequent high water flows.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Freshwater Marsh: Develops in areas of still or slow-moving permanent freshwater. This community is dominated by the perennial, emergent cattail (*Typha* spp.) or bulrush (*Schoenoplectus* spp.), which can reach heights of seven feet and grow dense enough to form a closed canopy. This vegetation occurs in scattered ponds and slow-flowing portions of the river and tributaries within the SEA.

Corresponding MCV communities:

- *Phragmites australis* (common reed marshes) Herbaceous Alliance and Semi-Natural Stands
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha* (*angustifolia*, *domingensis*, *latifolia*) (cattail marshes) Herbaceous Alliance
- *Lemna* (*minor*) *and relatives* (duckweed blooms) Provisional Herbaceous Alliance

Vernal Pool Systems: Extremely rare in the County. There are only two verified vernal pools currently recognized within the Santa Clara River watershed area: Cruzan Mesa and Plum Canyon. The SEA has been designated for these vernal pools. There are probably unrecognized ephemeral pools all along the river course where soil types are appropriate. For example, there is at least one

small documented seasonal pond with typical vernal pool characteristics within the Golden Valley Ranch portion of the upper Placerita-Sand Canyon watershed. This small pool is surrounded by coastal sage scrub, with a band of native needlegrass and melic grass on its fringes. The Golden Valley pool supports Riverside fairy shrimp and western spadefoot toad. It is considered a vernal pool by virtue of its habitat values and species that are unique to this type of seasonal formation.

Corresponding MCV communities:

- *Deinandra fasciculata* (clustered tarweed fields) Herbaceous Alliance
- *Eleocharis macrostachya* (pale spike rush marshes) Herbaceous Alliance
- *Lasthenia californica-Plantago erecta-Vulpia microstachys* (California goldfields-dwarf plantain - six-weeks fescue flower fields) Herbaceous Alliance
- *Juncus arcticus* (var. *balticus*, *mexicanus*) ([*Juncus balticus* ssp. *ater*, *Juncus mexicanus*] Baltic and Mexican rush marshes) Herbaceous Alliance

Chaparral: Consists of sclerophyllous (hard-leaved, evergreen), medium height to tall shrubs that form a dense cover on steep slopes, usually below 5,000 feet in Southern California. Dominant species found within this community include scrub oaks (*Quercus*, several species), chamise, manzanita, wild lilac (*Ceanothus* spp.), toyon (*Heteromeles arbutifolia*), and western mountain-mahogany on north-facing exposures; buckwheat, foothill yucca, chamise, hoary-leaf lilac (*Ceanothus cuneatus*), black sage (*Salvia mellifera*), and goldenbush (*Ericameria linearifolia*) on south-facing slopes. This plant community occupies most of the basin slopes along the Santa Clara River and on interior ridges and slopes within the watersheds and drainages west of Acton. Chaparral also occurs on some of the higher elevations of the eastern watershed portions of the SEA, where the shrubs frequently are interspersed as understory formations within oak and conifer woodlands.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise- white sage chaparral) Shrubland Alliance
- *Arctostaphylos glandulosa* (Eastwood's manzanita chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus cuneatus* (hoary leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus greggii* [*vestitus*] (cup leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus leucodermis* (chaparral whitethorn) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance

Coastal Sage Scrub and Coastal Sage Scrub-Chaparral Mixed Scrub: Formations that typically occur on south or west-facing slopes within the western portion of the SEA. Some sites may be artifacts of fire frequency or occurrence, while other areas appear to be stable scrub communities.

Dominant species are typically California sagebrush (*Artemisia californica*), purple sage (*Salvia leucophylla*), black sage, white sage (*S. apiana*), goldenbush, buckwheat, foothill yucca, California brittle bush (*Encelia californica*), golden yarrow (*Eriophyllum confertiflorum*), chamise, hoary-leaf lilac, and a variety of annuals and bulbs. Excellent examples of coastal sage scrub occur in upper Placerita Canyon watershed and on the ridgeline to the north, along the Santa Clara River just east of Sand Canyon, and in San Francisquito Canyon.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Ericameria linearifolia* (narrowleaf goldenbush scrub) Provisional Shrubland Alliance
- *Lotus scoparius* ([*Acmispon glaber*] deer weed scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Alluvial Fan Sage Scrub: Sometimes also known as floodplain sage scrub, generally consists of a mixture of shrubs, which colonize and persist within infrequently scoured and flooded terrain, such as floodplains, alluvial plains, or along seasonal streams. The dominant shrub in most washes is scalebroom (*Lepidospartum squamatum*), but thick leaf yerba santa (*Eriodictyon crassifolium*), Great Basin sagebrush, rabbitbrush (*Ericameria nauseosa*), skunk bush, holly leaf cherry (*Prunus ilicifolia*), and foothill yucca also usually occur in the habitat type, and may be dominant, depending upon substrates and subsurface hydrology. This vegetation type is common throughout the alluvial plains and washes in the SEA, and form particularly high diversity stands along the southern margin of the river at Acton, on uplands east of the Sand Canyon confluence, along the dry reaches of the river in Santa Clarita, and in lower San Francisquito Canyon. Extensive stands of Parish's Great Basin sagebrush-dominated alluvial scrub occur around Acton and in the Kentucky Springs portion of the SEA. Lower reaches of tributary drainages to the Santa Clara River often support unusual vegetation types (not addressed in the MCV) with dominance by holly leaf cherry. In addition, the Santa Clara

River floodplain provides an avenue of westward range extension for a small number of species more typically associated with the Mojave Desert flora and otherwise not expected within the cismontane region of Southern California. These include sandpaper plant (*Petalonyx thurberi*) and arrow weed (*Pluchea sericea*).

Corresponding MCV communities:

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Artemisia tridentata* (big sagebrush) Shrubland Alliance
- *Eriodictyon crassifolium* (thick leaf yerba santa scrub) Provisional Alliance
- *Eriogonum fasciculatum-Salvia apiana* (California buckwheat-white sage scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance
- *Malosma laurina* (laurel sumac scrub) Shrubland Alliance

Native and Non-Native Grassland Communities: Consist of low, herbaceous vegetation dominated by grasses, with native formations generally mixed with native bulbs and other herbaceous species, and often intermixed with naturalized annual taxa. There are representatives of native grasslands scattered within the SEA, most notably patches of different needlegrass (*Stipa*) species and melic (*Melica*) grasses on clay soils in Placerita Canyon, on slope wetlands and around oak woodlands on the ridge north of Placerita Canyon, and on less-disturbed xeric slopes in the eastern portion of the SEA. Seeps in chaparral often support homogeneous stands of giant wildrye (*Leymus condensatus*). Other native grasses occur sporadically within most natural habitats along the Santa Clara basin.

Non-native grassland consists of invasive annual grasses that are primarily of Mediterranean origin. Dominant species within this community include wild oats (*Avena* spp.), bromes (*Bromus* spp.), and other grasses, along with wild mustards (*Brassica*, *Hirschfeldia*, and *Sisymbrium* spp.) and other disturbance-facilitated “weedy” taxa. Non-native grasslands and other ruderal formations are the dominant understory on most disturbed substrates, particularly grazed areas.

Corresponding MCV communities:

- *Leymus condensatus* (giant wild rye grassland) Herbaceous Alliance
- *Nassella* [*Stipa*] *cernua* (nodding needle grass grassland) Provisional Herbaceous Alliance
- *Nassella* [*Stipa*] *lepida* (foothill needle grass grassland) Provisional Herbaceous Alliance
- *Nassella* [*Stipa*] *pulchra* (purple needle grass grassland) Herbaceous Alliance
- *Avena* (*barbata*, *fatua*) (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) *and Other Mustards* (upland mustards) Semi-Natural Herbaceous Stands

- *Bromus* (*diandrus,hordeaceus*)-*Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands

- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands

- *Centaurea* (*solstitialis*, *melitensis*) (yellow star-thistle fields) Semi-Natural Herbaceous Stands

- *Lolium perenne* [*Festuca perennis*] (perennial rye grass fields) Semi-Natural Herbaceous Stands

Disturbed or Barren Areas: These areas either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA includes non-native and native grasses and "weedy" herbaceous species, including doveweed, mustards, wire lettuce, sow thistle, telegraph weed, Russian thistle, dock, yellow star thistle, Australian saltbush, and cocklebur. Disturbed areas occur throughout the SEA on fallow agricultural sites, disked fields, abandoned pastures, residential development, paved road margins, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Corresponding MCV communities:

None at this time.

In a 2006 report submitted to PCR by South Coast Wildlands, in cooperation with the Upper Santa Clara Biodiversity Work Group, entitled *Wildlands of the Santa Clara River Watershed: Restoring and Maintaining the Integrity and Health of the River and its Watershed*, indicate several plant communities not previously identified as being present in the area. Desert scrub and Joshua tree woodland were described as being present in the eastern part of the watershed. Mainland holly leaved cherry woodland was also identified as a sensitive plant community that is common in the area and is included above as a subset of chaparral, *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance.

Wildlife

Wildlife within the SEA is extremely diverse and abundant, commensurate with extensive acreages of natural open space and the great diversity of habitat types within the Santa Clara River channels and on the surrounding uplands. While a few wildlife species may be entirely dependent upon or obligate within a single vegetative community, the mosaic of vegetation communities within the SEA and adjoining uplands constitutes a continuum of functional ecosystems. These ecosystems support a wide variety of wildlife species, within the SEA boundaries and as a part of the regional ecosystem.

Analysis of invertebrates on any given site generally is limited by a lack of specific data, but the size of the SEA and diversity of habitats present are considered sufficient to support healthy populations of a very large number of invertebrate species, probably in excess of 2,500 species. The riparian formations, wetlands, and aquatic habitats within the SEA support diverse faunas of arthropods, including native fairy shrimp, craneflies, blackflies and other aquatic dipterans, stoneflies, caddisflies, and dobsonflies, water boatmen, giant water bugs, ground beetles, diving beetles, and tiger beetles. Terrestrial insects occur around riparian corridors and in scrub habitats, and are particularly abundant in oak-dominated habitats. Insect orders are very well-represented taxonomically, and with some habitat specialization within the SEA include orthoptera, neuroptera, coleoptera, diptera, hymenoptera and lepidoptera.

Amphibians are abundant and relatively diverse within moister woodland areas, along montane canyon bottoms, in riparian areas, and within surface water features of the SEA. The overall riparian systems of the Santa Clara River basin support abundant populations of California and Baja California chorus frogs (*Pseudacris cadaverina*, *P. hypochondriaca*), California toad (*Anaxyrus boreas halophilus*), western spadefoot toad (*Spea hammondii*), American bullfrog (*Lithobates catesbeianus*), and African clawed frog (*Xenopus laevis*)—of which the latter two species are non-native. San Francisquito Canyon also supports populations of California red-legged frog (*Rana draytonii*) and arroyo toad (*Anaxyrus californicus*). Arboreal salamander (*Aneides lugubris*), garden slender salamander (*Batrachoseps major*), and painted ensatina (*Ensatina eschscholtzii picta*) are also present within mesic habitats in the SEA.

Open scrub, chaparral and alluvial fan habitats support diverse reptile populations, and the overall herpetofauna of the SEA includes numerous lizard species, along with southwestern pond turtle (*Emys marmorata*) in Agua Dulce and Bear canyons, as well as some parts of the main river channel. Yucca night lizard (*Xantusia vigilis*), western side-blotched lizard (*Uta stansburiana elegans*), Great Basin fence lizard (*Sceloporus occidentalis longipes*), Skilton's skink (*Plestiodon skiltonianus skiltonianus*), San Diego alligator lizard (*Elgaria multicarinata webbii*), coastal whiptail (*Aspidoscelis tigris stejnegeri*), coast horned lizard (*Phrynosoma blainvillii*), California legless lizard (*Anniella pulchra*), and San Diego banded gecko (*Coleonlyx variegatus abbotti*) would be expected within the SEA.

The SEA also supports a robust snake fauna, including desert threadsnake (*Rena humilis cahuilae*), red racer (*Coluber flagellum piceus*), California striped racer (*Coluber lateralis lateralis*), coast patch-nosed snake (*Salvadora hexalepis virgultea*), northern three-lined boa (*Lichanura orcutti*), San Diego gopher snake (*Pituophis catenifer annectens*), California glossy snake (*Arizona elegans occidentalis*), California kingsnake (*Lampropeltis getula californiae*), California mountain kingsnake (*Lampropeltis zonata*), long-nosed snake (*Rhinocheilus lecontei*), San Diego nightsnake (*Hypsiglena ochrorhyncha klauberi*), Baja California lyresnake (*Trimorphodon biscutatus lyrophanes*), western black-headed snake (*Tantilla planiceps*), two-striped garter snake (*Thamnophis hammondii*), San Bernardino ring-necked snake (*Diadophis punctatus modestus*), and southern Pacific rattlesnake (*Crotalus oreganus helleri*).

Bird diversity within the SEA is related to habitat opportunities for year-round residents, seasonal residents, migrating raptors, and song birds. Coastal sage scrub and chaparral host a suite of birds that are typical of such sites at lower elevations over most of the coastal slopes of Southern California. The most productive sites for resident coastal sage scrub and chaparral birds are around riparian and freshwater systems, which also attract large numbers of migrants during the spring and fall. Coastal sage and chaparral birds resident or breeding within the SEA include California quail (*Callipepla californica*), greater roadrunner (*Geococcyx californianus*), black-chinned hummingbird (*Archilochus alexandri*), Anna's hummingbird (*Calypte anna*), Costa's hummingbird (*C. costae*), coastal California gnatcatcher (*Polioptila californica californica*), northern mockingbird (*Mimus polyglottos*), California thrasher (*Toxostoma redivivum*), phainopepla (*Phainopepla nitens*), spotted towhee (*Pipilo maculatus*), Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*), California towhee (*Melozone crissalis*), black-chinned sparrow (*Spizella atrogularis*), lark sparrow (*Chondestes grammacus*), Bell's sage sparrow (*Amphispiza belli belli*), and lazuli bunting (*Passerina amoena*). Oak woodlands and riparian areas support many more species. Notable species include band-tailed pigeon (*Patagioenas fasciata*), western wood-pewee (*Contopus sordidulus*), summer tanager (*Piranga rubra*), black-headed grosbeak (*Pheucticus melanocephalus*), Bullock's oriole (*Icterus bullockii*), several swallow species, western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), and least Bell's

vireo (*Vireo bellii pusillus. Species associated with ruderal sites and grasslands include California horned lark* (*Eremophila alpestris actia*), savannah sparrow (*Passerculus sandwichensis*), and grasshopper sparrow (*Ammodramus savannarum*). Birds of prey (*including common migrants*) observed within the SEA include white-tailed kite (*Elanus leucurus*), northern harrier (*Circus cyaneus*), sharp-shinned hawk (*Accipiter striatus*), Cooper's hawk (*Accipiter cooperii*), red-shouldered hawk (*Buteo lineatus*), Swainson's hawk (*Buteo swainsoni*), red-tailed hawk (*Buteo jamaicensis*), golden eagle (*Aquila chrysaetos*), American kestrel (*Falco sparverius*), merlin (*Falco columbarius*), and prairie falcon (*Falco mexicanus*). Resident owl species within the SEA boundaries include barn owl (*Tyto alba*), great horned owl (*Bubo virginianus*), long eared owl (*Asio otus*), and California spotted owl (*Strix occidentalis occidentalis*).

Native mammal diversity within the SEA is considerable. These include bats (at least seven species), rodents (at least four species of deer mice, two species of woodrat, Beechey ground squirrel, western gray squirrel, and more), two types of rabbits and one hare, mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), common gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), cougar (*Puma concolor*), striped skunk (*Mephitis mephitis*), western spotted skunk (*Spilogale gracilis*), long-tailed weasel (*Mustela frenata*), American badger (*Taxidea taxus*), northern raccoon (*Procyon lotor*), and broad-footed mole (*Scapanus latimanus*). Black bear (*Ursus americanus*) also occur within the SEA boundaries, at least occasionally, but the San Gabriel Mountains population was introduced for game use, and this species is not native within the SEA.

Wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

Historically (and prehistorically) the riparian corridor along the Santa Clara River has served as the primary east-west linkage between the Pacific coastline, coast ranges, interior ranges, high desert and southern Sierra (via the Tehachapi Range). Animals moving through the Santa Clara drainage had unobstructed passage along the river and within the riparian systems between the coastal lowlands of Ventura County and the Mojave Desert. The tributary routes extend south into the Santa Susana Mountains, south and north into the San Gabriel Mountains, northward via Castaic, Bouquet and San Francisquito tributaries (over the coastal ranges and San Gabriel Mountains of the Transverse Ranges and into the San Joaquin Valley), west into the central coast ranges, or east through the Tehachapi Mountains, and into the southern Sierra Nevada. The present configuration of the tributary drainages has impinged upon connectivity from the Santa Clarita Valley to the north, but the Santa Clara River remains relatively intact and open. The SEA embraces the river corridor and the linkage zones that are considered essential to ensuring connectivity and resource values within the historic movement zones for all of the wildlife species present within the County portion of the Santa Clara River, including mountain lion, coyote, bobcat, and several medium-sized mammals, as well as birds, reptiles, amphibians, and fishes.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and

Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. Species with critical habitat in the SEA include the red-legged frog, arroyo toad, least Bell's vireo, and coastal California gnatcatcher. A species with essential habitat (critical habitat was proposed but not designated for species listed before 1978) is the unarmored threespine stickleback (fish).

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include bigcone Douglas-fir forest, Fremont cottonwood forest, black willow thickets, California sycamore woodlands, clustered tarweed fields, chamise-white sage chaparral, holly leaf cherry chaparral, California brittle bush scrub, white sage scrub, California buckwheat-white sage scrub, narrowleaf goldenbush scrub, thick leaf yerba santa scrub, scale broom scrub, giant wild rye grassland, nodding needle grass grassland, foothill needle grass grassland, and purple needle grass grassland. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Peirson's morning-glory (*Calystegia peirsonii*) RPR 4.2
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) FC, SE, RPR 1B.1
- Slender-horned spineflower (*Dodecahema leptoceras*) FE, SE, RPR 1B.1
- Palmer's grapplinghook (*Harpagonella palmeri*) RPR 4.2
- Newhall sunflower (*Helianthus inexpectatus*) RPR 1B.1
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) RPR 1A
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1

- Davidson's bushmallow (*Malacothamnus davidsonii*) RPR 1B.2
- Moran's navarretia (*Navarretia fossalis*) FT, RPR 1B.1
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- Mason's neststraw (*Stylocline masonii*) RPR 1B.1
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- California Orcutt grass (*Orcuttia californica*) RPR FE, SE, 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Riverside fairy shrimp (*Streptocephalus woottoni*) FE
- Santa Ana sucker (*Catostomus santaanae*) FT, FSS, SSC
- Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) FE, FSS, SE, CDFG Fully Protected
- Arroyo chub (*Gila orcuttii*) FSS, SSC
- Arroyo toad (*Anaxyrus californicus*) FE, SSC
- California red-legged frog (*Rana draytonii*) FT, SSC
- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC

- Cooper's hawk (*Accipiter cooperii*) CDFG Watch List
- Tricolored blackbird (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Grasshopper sparrow (*Ammodramus savannarum*) CDFG Special Animals List
- Bell's sage sparrow (*Amphispiza belli belli*) BCC, CDFG Watch List
- Golden eagle (*Aquila chrysaetos*) BCC, BLMS, CDFG Watch List, CDFG Fully Protected, CDF
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- Ferruginous hawk (*Buteo regalis*) BCC, BLMS, CDFG Watch List, AWL, LAA
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, BCC, FSS, SE
- Yellow warbler (*Dendroica petechia brewsteri*) SSC
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- California horned lark (*Eremophila alpestris actia*) CDFG Watch List, LAA
- Prairie falcon (*Falco mexicanus*) BCC, CDFG Watch List, LAA
- American peregrine falcon (*Falco peregrinus anatum*) BCC, FSS, SE, CDF, CDFG Fully Protected, AWL, ABC
- California condor (*Gymnogyps californianus*) FE, SE, CDF, CDFG Fully Protected, USBC, AWL, ABC
- Yellow-breasted chat (*Icteria virens*) SSC
- Loggerhead shrike (*Lanius ludovicianus*) BCC, SSC, LAA
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Bank swallow (*Riparia riparia*) ST
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Pallid San Diego pocket mouse (*Chaetodipus fallax pallidus*) SSC
- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High

- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Western yellow bat (*Lasiurus xanthinus*) WBWG High
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- California leaf-nosed bat (*Macrotus californicus*) FSS, SSC, WBWG High
- Fringed myotis (*Myotis thysanodes*) BLMS, WBWG High
- Long-legged myotis (*Myotis volans*) BLMS, SSC, WBWG Medium
- Yuma myotis (*Myotis yumaensis*) BLMS, WBWG Low-Medium
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- Southern grasshopper mouse (*Onychomys torridus ramona*) SSC
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below.

CRITERIA ANALYSIS OF THE SANTA CLARA RIVER SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The only existing natural population of the federally-endangered unarmored three-spine stickleback is within the Santa Clara River and its tributaries, and all of its essential habitat is in this SEA. The federally-threatened Santa Ana sucker occurs in the river, as does the state species of concern, the arroyo chub. The population of state and federally-endangered slender-horned spineflower in Bee Canyon is one of fewer than seven known occurrences for this species, one of only two known occurrences in the County, and one of its largest populations. San Francisquito Creek has a breeding area for the endangered red-legged frog. The San Fernando Valley spineflower (at Newhall Ranch in Interstate-5 vicinity) is found in only a few nearby places. Some of the critical habitat for the threatened California coastal gnatcatcher is included in this SEA. Western spadefoot, which is a species of concern, is extremely rare and local in the County away from this SEA. One of the largest, if not largest populations of least Bell's vireo in the County occurs along the river in the vicinity of the crossing of Interstate-5 near Newhall Ranch. Many RPR-listed rare plants

	Criterion	Status	Justification
			occur within the SEA. Critical habitat occurs in the SEA for the listed arroyo toad, the red-legged frog, the coastal California gnatcatcher, and the least Bell's vireo.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The low-elevation bigcone Douglas fir-canyon oak forests above Placerita Canyon, the vernal pool in the Placerita Canyon-Sand Canyon divide, the native grassland on the Golden Valley Ranch (upper Placerita Canyon), and the alluvial fans with sage scrub in lower San Francisquito Canyon, Kentucky Springs and Acton are unique and regionally restricted biotic communities. Additionally, the riparian forests and woodlands along the Santa Clara River are among the most extensive, diverse and intact vegetative stands of this type in Southern California. Rare aquatic species, such as the unarmored three-spined stickleback, Santa Ana sucker, red-legged frog, least Bell's vireo, summer tanager, spineflower, and many others represented within the SEA are found nowhere else in the region.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The cottonwood-willow forests and woodlands, alluvial fan sage scrub, and coast live oak riparian forest are best represented in the County within the SEA. The lower elevation examples of bigcone Douglas fir-canyon oak forest communities where they mix with low-elevation biota are restricted to the edges of mountain habitat communities, which are regionally rare and also designated in this SEA.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The Santa Clara River is simultaneously an oasis running through a dry landscape and an extension of coastal conditions into the dry interior. For this reason, it supports unique populations of aquatic and amphibious species, as well as arid lands species extending towards the coast and coastal species' extension inland. It is a principle migratory route for the County plants and animals and a center of diversity for the County. The Santa Clara River and its tributaries provide breeding opportunities for numerous species otherwise not known to breed within the County, including California red-legged frog, summer tanager, southwestern willow flycatcher, and the unarmored three-spined stickleback . The extensive riparian areas shelter dozens of migrant songbird species during winter, including high concentrations of white-crowned and golden-crowned sparrows, fox sparrow, yellow-rumped warbler, dark-eyed junco, and sharp-shinned hawk. The SEA embraces the river corridor and the linkage zones that are considered essential to ensuring connectivity and resource values for many of the wildlife species that are present within the County portion of the Santa Clara River.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The Santa Clara River represents a unique example of a drainage that stretches from the desert to the coast through the mountains. Its resources are, by definition, present at their geographic extremes. Plants such as western juniper, snake cholla, basin sagebrush, and birds, such as summer tanager are at the southwestern edges of their ranges along the river. Coastal taxa

Criterion		Status	Justification
			extend to the headwaters in the Acton area. High elevation species, such as bigcone Douglas fir, spotted owl, and Steller's jay occur at fairly low elevations at the edges of Santa Clara River valley, on north facing slopes that remain cool all summer.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The SEA encompasses some of the highest quality, least disturbed and biotically intact acreage of bigcone Douglas-fir-canyon oak forest, riparian forest and woodland, coastal sage scrub, and alluvial fan sage scrub that remains in the County, and one of the three known vernal pools along the river. Vernal pools are rare everywhere in California.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) numerous examples of species at their habitat extremes as the coastal and desert influences meet; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Santa Felicia SEA

Location

General

The Santa Felicia Significant Ecological Area (SEA) is located northwest of the City of Santa Clarita within unincorporated area of the County. Some of the SEA extends into the Angeles National Forest. The area is west of the Interstate-5, north of State Route-126 and encompasses almost the entire County portion of the Santa Felicia watershed that drains into Lake Piru and Piru Creek. Piru Creek has the largest watershed of any tributary of the Santa Clara River. The SEA is largely composed of natural coastal slopes of the western San Gabriel Mountains, with south-facing slopes of coastal sage scrub and grasslands, north-facing slopes of oak woodland and chaparral, and canyons of riparian oak forest and other riparian habitats. This habitat has been diminished by development, and the SEA is one place in the County where the natural habitat remains.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Whitaker Peak and Val Verde.

General Boundary and Resources Description

Starting at the north end of the SEA boundary on the Ventura-Los Angeles County line, the northern SEA boundary is about one-quarter to one-half mile north of the boundary of Angeles National Forest, with private property as it follows along the northern ridgeline of Devil Canyon. Most of the SEA captures the natural, coastal sage scrub-covered south-facing slopes, oak-forests and mixed chaparral of the north-facing slopes, and deep ravines with riparian oak forest in the canyons. Devil Canyon is a major tributary of Piru Creek (at Lake Piru) in Ventura County. Where the Devil Canyon watershed contacts the southern ridgeline off Townsend Peak, the SEA boundary turns south along

a ridge that separates Santa Felicia Canyon and its tributaries on the west side, from Palomas Canyon on the east side. The boundary goes south out of the Angeles National Forest into private lands about a 0.75 mile south of Townsend Peak. To capture the watershed tributaries, the eastern boundary follows the dominant ridgeline between Palomas Canyon and Santa Felicia Canyon, and then between Santa Felicia Canyon and Violin Canyon after Palomas Canyon joins Violin Canyon. There is a triple divide for the watersheds of Violin Canyon (which joins Castaic Creek), the watershed of Romero Canyon, which joins Hasley Canyon before it joins Castaic Canyon, and Santa Felicia Canyon, which is a tributary of Piru Creek. At the triple divide, the SEA boundary turns west to follow the ridge of the Santa Felicia watershed. The boundary crosses Loma Verde (peak), where it separates Santa Felicia Canyon from Romero Canyon, and the unnamed headwater creeks of Hasley Canyon, excluding the rapidly developing areas. About a mile southwest of Loma Verde Canyon, the SEA boundary turns south and west to encompass the watershed of Oak Canyon, with coast live oaks and riparian forest. The SEA boundary goes north along the Ventura-Los Angeles County line, crossing riparian forest of Santa Felicia Canyon and Devil Canyon into the Angeles National Forest, where it joins the north ridge of Devil Canyon. Most of the SEA is included in the wildlife movement linkage Sierra Madre-Castaic Connection that was outlined by the South Coast Wildlands study of linkages (Penrod, *et al*. 2005).

The SEA includes a wide variety of topographic features and habitat types. The orientation and extent of the SEA encompasses the surface and subsurface hydrology of the Santa Felicia watershed, from its headwater, tributaries, and basin to the point at which it exits the County jurisdiction.

The SEA encompasses most of the County portion of the Santa Felicia watershed that drains into Lake Piru. This watershed is largely undeveloped and contains vast stands of coastal sage scrub and chaparral communities on south- and north-facing slopes. In addition to the undisturbed upland habitats, the watershed includes examples of mixed riparian (sycamore-willow), oak riparian and coast live oak forests and alluvial scrub in the bottomlands. Grasslands occur in areas where grazing may have taken place; however, there is little invasion of these ruderal taxa into the native communities. A brief summary of the plant communities present, or likely to occur, within the SEA is provided in the Vegetation section.

Vegetation

The plant communities within the SEA are composed of numerous plant species. These plant species are adapted to a Mediterranean climate with a cool, wet season followed by a hot, dry season. Due to the topographic complexity and coastal and desert influences, the SEA supports a wide diversity of plant species.

Plant communities within the SEA include: coast live oak woodland, coast live oak riparian forest, chaparral, coastal sage chaparral scrub, non-native and native grasslands, alluvial fan sage scrub, and sycamore-willow riparian woodland.

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

Coastal Sage Chaparral Scrub Communities: Consist of drought-deciduous, low, soft-leaved shrubs and herbs on gentle to steep slopes below 5,000 feet in elevation. Several dominant species may occur within scrub communities, with some areas overwhelmingly dominated by one or two species. Dominant species include California sagebrush (*Artemisia tridentata*), California buckwheat (*Eriogonum fasciculatum*), California brittle bush (*Encelia californica*), purple sage (*Salvia leucophylla*), and deerweed (*Acmispon glaber*). Coastal sage chaparral scrub is found at the lower elevations within the SEA on drier south-facing slopes, but can also be found on the north-facing slopes and canyons.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Ericameria linearifolia* (narrowleaf goldenbush scrub) Provisional Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Alluvial Fan Scrub: Consists of a mixture of shrubs that colonize sandy-gravelly flood deposited soils within intermittent creeks, arroyos, and drier terraces in large washes. Dominant species include California buckwheat (*Eriogonum fasciculatum*), scalebroom (*Lepidospartum squamatum*), quail bush (*Atriplex lentiformis*), and white sage (*Salvia apiana*).

Corresponding MCV communities:

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scale broom scrub) Shrubland Alliance
- *Malosma laurina* (laurel sumac scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance

Coast Live Oak Woodlands: Commonly occur along drainages that experience at least a seasonal flow or in other areas under mesic conditions. Soil structure and soil moisture are the most important factors for the survival of oak woodlands; soils must be deep, uncompacted, fertile, well-aerated, and well-drained. This community is dominated by coast live oak (*Quercus agrifolia* var. *agrifolia*). If sufficient groundwater is present, western sycamore (*Platanus racemosa*), which is usually associated with riparian habitats, may also occur in the oak woodland. Oak woodlands occupy areas within the canyons and drainages of the SEA.

Corresponding MCV community:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Coast Live Oak Riparian Forest: A variation of coast live oak woodland, where the canopy is more closely grown, and the trees occur in narrower formations along watercourses. Willow, California bay (*Umbellularia californica*), mulefat (*Baccharis salicifolia*), and other riparian species often occur in the understory.

Corresponding MCV community:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Sycamore-Willow Riparian Woodland: May include the following: western sycamore (*Platanus racemosa*), black willow (*Salix gooddingii*), arroyo willow (*Salix lasiolepis*), skunkbush (*Rhus aromatica*), and California blackberry (*Rubus ursinus*).

Corresponding MCV Community:

- *Platanus racemosa* (California sycamore woodland) Woodland Alliance

Grassland Communities: Consist of low, herbaceous vegetation that is dominated by grasses, but generally also harbors native forbs and bulbs, as well as naturalized annual forbs. Topographic factors that contribute to grassland presence include gradual slopes or flat areas with deep, well-developed soils in areas below 3,000 feet. The species richness of grassland communities is dependent upon a number of land use factors, including intensity and duration of natural or anthropogenic disturbances, such as grazing.

Native grassland is often associated with coastal sage chaparral scrub and is found in pockets in close proximity to coastal sage chaparral scrub and non-native grassland. This community consists of at least 10 percent relative cover of native herbaceous plants (grasses and forbs). The remaining vegetative cover is made up of non-native grasses found in annual grassland and a variety of annual, showy flowers such as golden stars (*Bloomeria crocea*) and blue-eyed grass (*Sisyrinchium bellum*). Native grassland may be found scattered throughout the SEA, mostly in openings in coastal sage chaparral scrub and mixed with non-native grasslands.

Corresponding MCV communities:

- *Leymus condensatus* (giant wild rye grassland) Herbaceous Alliance
- *Nassella* [*Stipa*] *cernua* (nodding needle grass grassland) Provisional Herbaceous Alliance
- *Nassella* [*Stipa*] *lepida* (foothill needle grass grassland) Provisional Herbaceous Alliance

- *Nassella* [*Stipa*] *pulchra* (purple needle grass grassland) Herbaceous Alliance

Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender wild oat (*Avena barbata*), wild oat (*Avena fatua*) ripgut brome (*Bromus diandrus*), and red brome (*Bromus madritensis* ssp*. rubens*).

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards (upland mustards) Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) ([*Bromus madritensis* ssp*. rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Centaurea* (*solstitialis*, *melitensis*) (yellow star-thistle fields) Semi-Natural Herbaceous Stands
- *Lolium perenne* [*Festuca perennis*] (perennial rye grass fields) Semi-Natural Herbaceous Stands

Wildlife

The SEA provides for extremely diverse and abundant wildlife, commensurate with extensive acreages of natural open space and great diversity of habitat types, within the stream channels and on the surrounding uplands. While a few wildlife species may be entirely dependent upon or obligate within a single vegetative community, the mosaic of vegetation communities within the area and adjoining uplands constitutes a continuum of functional ecosystems. These ecosystems support a wide variety of wildlife species, within the SEA boundaries and as a part of the regional ecosystem.

Analysis of invertebrates on any given site generally is limited by a lack of specific data, but the size of the SEA and diversity of habitats present are considered sufficient to support healthy populations of a very large number of invertebrate species. The riparian formations and aquatic habitats within the SEA support diverse faunas of arthropods, which may include native fairy shrimp, craneflies, blackflies and other aquatic dipterans, stoneflies, caddisflies, and dobsonflies, water boatmen, giant water bugs, ground beetles, diving beetles, and tiger beetles. Terrestrial insects are abundant around riparian corridors and in scrub habitats, particularly in oak-dominated habitats.

Amphibians are abundant and relatively diverse within moister woodland areas, along montane canyon bottoms, in riparian areas, and within surface water features. The overall riparian systems of the SEA provide habitat for a number of frog and toad populations, which may include populations of Baja California chorus frog (*Pseudacris hypochondriaca*) and California chorus frog (*P. cadaverina*), California toad (*Anaxyrus halophilus*), and western spadefoot (*Spea hammondii*), as well as the federally-endangered arroyo toad (*Anaxyrus californicus*). The federally-threatened California red-legged frog (*Rana draytonii*) has a known population and critical habitat in Michael Creek to the north. This frog could occur in Lake Piru and during times of very high water in the SEA. Open scrub, chaparral and alluvial fan habitats support diverse reptile populations, and the overall herpetofauna of the SEA would encompass numerous lizard species as well as a robust snake fauna.

Bird diversity within the SEA is related to habitat opportunities for year-round residents, seasonal residents, migrating raptors, and song birds. Coastal sage chaparral scrub and chaparral host a suite of birds typical of such sites at lower elevations over most of the coastal slopes of Southern California. The most productive sites for resident coastal sage chaparral scrub and chaparral birds are around riparian and freshwater systems, which also attract large numbers of migrants during the spring and fall. Oak woodlands and riparian areas generally support many more species. Notable species include the summer tanager (*Piranga rubra*), Bullock's oriole (*Icterus bullockii*), black-headed grosbeak (*Pheucticus melanocephalus*), band-tailed pigeon (*Patagioenas fasciata*), western wood-pewee (*Contopus sordidulus*), several swallow species, western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), willow flycatcher (*Empidonax traillii*), least Bell's vireo (*Vireo bellii pusillus*), and the California condor (*Gymnogyps californianus*).

Native mammal diversity within the SEA is considerable. These likely include bats, rodents, squirrels, rabbits, moles, weasels, American badger (*Taxidea taxus*), skunks, raccoon (*Procyon lotor*), gray fox (*Urocyon cinereoargenteus*), bobcat (*Lynx rufus*), coyote (*Canis latrans*), mountain lion (*Puma concolor*), and mule deer (*Odocoileus hemionus*).

Wildlife Movement

The SEA provides riparian corridors, which serve as linkages between the Pacific coastline, coast ranges, interior ranges, the high desert and southern Sierras (via the Tehachapi Range). Animals move through the Santa Felicia watershed along and within the riparian systems between Piru Lake in Ventura County and the San Gabriel Mountain range and beyond. The tributary drainages in this SEA appear fully intact and open and support regional movement by many wildlife species. Most of the SEA was designated as an important wildlife movement linkage—Sierra Madre-Castaic Connection—which was outlined by the South Coast Wildlands study of linkages (Penrod, *et al*. 2005).

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, or otherwise rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include chamise-white sage chaparral, holly leaf cherry chaparral, California brittle bush scrub, narrowleaf goldenbush scrub, scale broom scrub, white sage scrub, California sycamore woodland, giant wild rye grassland, nodding needle grass grassland, foothill needle grass grassland, and purple needle

grass grassland, which occur throughout the SEA.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Braunton's milk-vetch (*Astragalus brauntonii*) FE, RPR 1B.1
- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Peirson's morning-glory (*Calystegia peirsonii*) RPR 4.2
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) FC, SE, RPR 1B.1
- Slender-horned spineflower (*Dodecahema leptoceras*) FE, SE, RPR 1B.1
- Palmer's grapplinghook (*Harpagonella palmeri*) RPR 4.2
- Newhall sunflower (*Helianthus inexpectatus*) RPR 1B.1
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) RPR 1A
- Davidson's bushmallow (*Malacothamnus davidsonii*) RPR 1B.2
- Ojai navarretia (*Navarretia ojaiensis*) RPR 1B.1
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Late-flowered mariposa lily (*Calochortus fimbriatus*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- California Orcutt grass (*Orcuttia californica*) RPR FE, SE, 1B.1

Sensitive Animal Species

The following vertebrate species are state and/or federally-listed as endangered or threatened, and are known to have occurred within the SEA or have potential to occur in the SEA:

- Riverside fairy shrimp (*Streptocephalus woottoni*) FE
- Cuckoo wasp [no common name] (*Ceratochrysis longimala*) CDFG Special Animals List

- Arroyo toad (*Anaxyrus californicus*) FE, SSC
- California red-legged frog (*Rana draytonii*) FT, SSC
- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Cooper's hawk (*Accipiter cooperii*) CDFG Watch List
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Grasshopper sparrow (*Ammodramus savannarum*) CDFG Special Animals List
- Bell's sage sparrow (*Amphispiza belli belli*) BCC, CDFG Watch List
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, BCC, FSS, SE
- Yellow warbler (*Dendroica petechia brewsteri*) SSC
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- California horned lark (*Eremophila alpestris actia*) CDFG Watch List, LAA
- Prairie falcon (*Falco mexicanus*) BCC, CDFG Watch List, LAA
- California condor (*Gymnogyps californianus*) FE, SE, CDF, CDFG Fully Protected, USBC, AWL, ABC
- Yellow-breasted chat (*Icteria virens*) SSC
- Loggerhead shrike (*Lanius ludovicianus*) BCC, SSC, LAA
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High

- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- California leaf-nosed bat (*Macrotus californicus*) FSS, SSC, WBWG High
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- American badger (*Taxidea taxus*) SSC

CRITERIA ANALYSIS OF THE SANTA FELICIA SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	The SEA does not include known core habitat.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The natural mountainous terrain and vegetation habitats of the SEA, which is a coastal drainage, have been diminished elsewhere within Southern California through development. The SEA encompasses a fine example of vegetation that has not been impacted very much by development.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	This is a somewhat remote area where natural flora and natural bottoms remain in the canyons, invasive predators are nonexistent, and human intrusion is minimal, which is a rare habitat in the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The SEA encompasses important tributaries (Santa Felicia Canyon and Devil Canyon) of Piru Creek. Piru Creek is the major tributary of the Santa Clara River. Nearly all of the drainages within the SEA are natural with sensitive habitats of all kinds of riparian forest. These drainages are all migratory corridors for both plants and animals that connect the San Gabriel Mountains with the Santa Clara River and the coast, the Sierra Madre-Castaic Connection.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Not Met	The Santa Felicia watershed is not known as a physical/geographical extreme habitat.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The Santa Felicia watershed is an excellent example of the inland watercourses and their vegetation on the coastal side of the Transverse Ranges. It is largely undisturbed, and a number of the drainages are still perennial.

In conclusion, the area is an SEA because it contains: B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Santa Monica Mountains SEA

Location

General

The Santa Monica Mountains Significant Ecological Area (SEA) is located within the Santa Monica Mountains in a mostly unincorporated area of the County. Much of the area is in the Santa Monica Mountains National Recreation Area, but is privately owned. Many of the federal lands under the jurisdiction of the National Park Service (NPS) are included in the SEA designation. Many of the state parklands, notably Malibu Creek State Park and Topanga State Park, are also included in the SEA. The SEA includes nearly all of the canyons and ridges from the Ventura-Los Angeles County line, and east to Sullivan Canyon, which is near the communities of Pacific Palisades Brentwood to the south, and Encino to the north. From south to north, the SEA extends from the Pacific Ocean shoreline or urban-wildland interface of Malibu, through the unincorporated area of the Santa Monica Mountains proper, to the northern edge of the SEA extending along the undeveloped southern edge of the San Fernando Valley or irregularly along the Ventura-Los Angeles County line. It should be stated that this SEA recognizes the rare habitat of a small regional mountain range with a high diversity of topography and moisture regimes, and with vegetation adapted to a Mediterranean climate, which is globally rare, existing elsewhere only along western portions of continents at 30-40° latitude[1]. Although the habitats may seem common within the Santa Monica Mountains, in terms of limited indigenous global ranges of the constituent species, their special adaptations to climate, the relatively intact character of the habitats, and the plant assemblage of the Santa Monica Mountains are unique. Development within the SEA that extends the nearby expansive urban development of the Los Angeles Basin and San Fernando Valley needs to be carefully considered to preserve these special resources.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Thousand Oaks, Calabasas, Canoga Park, Triunfo Pass, Point Dume, Malibu, and Topanga.

General Boundary and Resources Description

Within the SEA boundary, there are a number of areas that are not a part of the SEA due to dense development. For example, La Sierra, Malibu Lake, and most of the City of Malibu have been

[1] Six regions on Earth have a coastal climate where ocean currents mediate an equable climate yet cause most precipitation to occur outside the summer period of most intense sunlight and most vegetative growth for many plants. These are California, the Mediterranean Basin, portions of South Australia, South Africa, and Chile

excluded.

The majority of the SEA lies within the unincorporated area of the County. Other jurisdictions include the City of Malibu, the City of Los Angeles, City of Calabasas, the City of Agoura Hills, the City of Hidden Hills, and the City of Westlake Village.

From the Ventura-Los Angeles County line to the vicinity of Topanga Beach, the southern boundary of the SEA irregularly contacts the boundary of the Malibu Coastline CRA, which extends offshore about a 0.8 mile to capture the kelp beds and rich natural marine communities of and off the coastline of the Santa Monica Mountains. The sandy beaches along this SEA are the least disturbed beaches of the County, some of them completely natural. This is a remnant of the typical rock and sand shoreline that once occurred along the coast of Southern California. From Mugu Lagoon to Latigo Point (the County portion starting at the Ventura-Los Angeles County line and Leo Carillo State Beach), this is an ASBS (Area of Special Biological Significance), which is a marine area designated by the State Water Resources Control Board as having exceptionally good water quality and natural community features. Populated and disturbed areas along the shore are not included in the SEA.

Beginning at the intersection of the Ventura-Los Angeles County line and State Route-1, the southern area of the SEA includes all the terrestrial area of Leo Carrillo State Beach (a state park that has much beautiful upland acreage of grasslands, coastal chaparral, and an excellent riparian area of sycamore-oak forest along the Arroyo Sequit). The Arroyo Sequit from the coast to the junction of West and East forks and about a 0.5 mile of the West Fork are federally-designated critical habitat for the southern steelhead (*Oncorhynchus mykiss irideus*), which is a salmon that runs upstream for breeding, but spends most of its life in the ocean. The young fish, however, spend the first year of life in fresh water.

At the eastern boundary of Leo Carillo State Beach, an unnamed canyon is excluded from the SEA, but San Nicolas Canyon with its riparian woodland is included all the way to the shore. Urban areas to the east of San Nicolas Canyon are also excluded. The Los Alisos and Lechuza Canyon immediate drainages are included up to the highway. From Lechuza Canyon, the excluded area extends north to the southern border of Charmlee Natural Area (a County park supporting grasslands and chaparral). Much of the Encinal Canyon drainage is included in the SEA north of State Route-1, and the Steep Hill Canyon drainage is included north of State Route-1. Trancas Canyon is densely settled in the area near the coastline; only the steeper, natural section is included in the SEA. To the east, a large excluded area encompasses the dense habitation of the Malibu Riviera.

The SEA includes the riparian forest of Zuma Canyon as it exits onto the coastal plain, with a small sub-watershed designated critical habitat for the federally-endangered Braunton's milkvetch (*Astragalus brauntonii*). This rare plant is narrowly endemic to four mountain ranges of Southern California that have a particular marine-originated rock stratum of interbedded carbonates and sandstones. The SEA also includes portions of the riparian forest of Ramirez Canyon, where it has not been impacted by development in the Malibu Riviera. The natural area of Escondido Canyon and its 150 feet waterfall is included. Latigo Canyon is included north of State Route-1, where chaparral intergrades with walnut and oak woodlands along the drainages and north-facing slopes. East of Latigo Canyon, the boundary of the excluded area follows the ridges immediately north of State Route-1 to join the highway west of Solstice Canyon. Solstice Canyon and its County Park are included in the SEA. These support grasslands, chaparral, and a fine riparian area of sycamore-oak forest along Solstice Canyon. Puerco and Marie Canyon drainages are included north of State

Route-1.

In the vicinity of Winter Canyon, the boundary follows Malibu Canyon Road to exclude the central community area of Malibu in another large island. A finger of the SEA extends through central Malibu along Malibu Creek in the area of Malibu Creek State Park and Malibu Lagoon State Beach to include the Creek and Malibu Lagoon south of Pacific Coast Highway. This is one of the points of contact between the Santa Monica Mountains SEA and the Malibu Coastline CRA. Malibu Creek from the shore to its major bend to the west in Malibu Canyon is federally-designated critical habitat for the southern steelhead. Coincident with the steelhead critical habitat along Malibu Creek and all brackish portions of the Malibu Lagoon are designated critical habitat for the endangered tidewater goby (*Eucyclogobius newberryi*). This little two-inch fish was once common in brackish water of coastal lagoons of streams the length of the State of California. This pristine habitat is disappearing (the fish is apparently gone from San Francisco Bay), and any location where the tidewater goby is still found is a unique place.

The Malibu Lagoon is the only remaining intact coastal lagoon in the County[2], and still has its perennial stream to maintain the brackish conditions that are essential to the diverse and unique group of species of coastal lagoons. The federally-endangered southern steelhead passes through this lagoon on its upstream and downstream spawning runs, and its young fish (smolts) may spend some time in the lagoon before entering their oceanic habitat. The passage is critical habitat for the steelhead, as well as for the endangered tidewater goby (*Eucyclogobius newberryi*). This lagoon has one of the County's three [3] remaining saltmarshes, with dominant species of pickleweeds (*Arthrocnemum subterminale* and *Salicornia pacifica*). The Malibu Lagoon supports a good representation of coastal strand community (now groomed off many of the recreational beaches), is a resting stop on the Pacific Flyway (over 200 species of birds reported), and has many resident avian species. From fall to spring, it supports a flock of the federally-threatened western snowy plover (*Charadrius alexandrinus nivosus*), and there are recent indications that some may over-summer to breed (after a hiatus in breeding of many decades, Ryan Ecological Consulting, 2010). The pickleweed is valuable non-breeding habitat for the state-endangered Belding's savannah sparrow (*Passerculus sandwichensis beldingi*).

East of central Malibu, the excluded area borders primarily follow the less-inhabited ridges that border Carbon and Las Flores canyons and about a 0.5 mile north of State Route-1. East of Las Flores Canyon, the border of the excluded area follows a transmission line to skirt an old oil field. At the western ridge of Piedra Gorda, the SEA boundary follows the ridgeline southeast to State Route-1. From Piedra Gorda, the SEA boundary closely tracks State Route-1 along the substantial sea cliffs, avoiding two small developed areas north of the highway near the mouths of Pena and Tuna canyons. The SEA includes all of the meandering Topanga Canyon Creek at Topanga Beach. Upstream nearly to the community of Fernwood, Topanga Canyon is federally-designated critical habitat for the southern steelhead. Near the shore in Topanga Canyon Creek is critical habitat for the tidewater goby. This is the eastern point of contact between the Malibu Coastline CRA and SEA. It is also at this point where the shoreline where there are no more excluded areas.

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[2] Ballona Creek lagoon is also in Los Angeles County, but exists in a disturbed condition.

[3] The three areas with salt marsh in Los Angeles County are Alamitos Bay, Ballona Lagoon, and Malibu Lagoon.

The SEA includes Parker Mesa, north of State Route-1, and is coterminous with the boundary for the City of Los Angeles towards the north. About one mile north of the coast, the boundary extends to the east, contouring around the ridgelines that border the populated areas of Santa Ynez, Pulga, and Temescal canyons, with some residential areas on the ridges excluded from the SEA. These three canyons contain riparian oak and sycamore forests, which are a good variety of canyon habitats that include rocky outcrops and small waterfalls, are preserved in their upper reaches by inclusion in the Topanga State Park. The upstream areas of Santa Ynez, Pulga, and Temescal canyons that are uphill from the community of Palisades Highlands include much of federally-designated critical habitat for the Braunton's milkvetch. The boundary skirts Will Rogers State Park, but includes much of the unpopulated part of Rustic Canyon.

At Rustic Canyon, the boundary follows the eastern ridge to the north. Tracing the edge of development along the eastern slope of the canyon, the boundary continues north and eventually crosses over the ridgeline and into the undeveloped part of Sullivan Canyon. The boundary then follows the eastern slope of Sullivan Canyon and continues north along the ridgeline between Sullivan Canyon and Mandeville Canyon. After crossing the main ridge of the coastal zone and Mulholland Drive near San Vicente Mountain, the SEA boundary reaches and includes the sub-watershed of Encino Reservoir.

On the west side of Encino Reservoir, the SEA boundary turns west and follows the edge of development on the northern slopes of the Santa Monica Mountains that form the southern border of the San Fernando Valley. Some development is excluded on the east side of Topanga Canyon and the Calabasas Highlands area. The upper reaches of Topanga Canyon are included, and the SEA crosses the ridge to include the upper slopes of a natural drainage that is opposite to Topanga Canyon on the San Fernando Valley side.

West of Calabasas Park, the SEA boundary extends northeast and contours along the upper slopes of McCoy Canyon to include a finger of SEA on the north ridge of McCoy Canyon, which is part of state park land. On the west side of Calabasas Park and Hidden Hills, the boundary crosses State Route-101 along the western edge of development in Hidden Hills north to the County line. The undeveloped portion of Gates Canyon within the Simi Hills and its watershed is included north to the Ventura-Los Angeles County line, excluding a ridgetop island and developed portions of the City of Calabasas. A narrow finger of connection joins the portion of the SEA east of the City of Calabasas to the area west of the City, north of State Route-101 along a tributary of Las Virgenes Creek. Las Virgenes is an important tributary of Malibu Creek, and although this area is not in the coastal zone, it represents a portion of the upper coastal watershed. Further to the west, the boundary extends north again to encompass the open space from Las Virgenes Road along the Ventura-Los Angeles County line to the edge of development within the City of Agoura Hills. Within this portion of the SEA, Cheseboro Canyon contains fine natural, undeveloped sections of canyon just east of the City of Agoura Hills that are administered by both the NPS and the State Park system. The SEA includes all of undeveloped Cheseboro Canyon and the undeveloped western ridge of Cheseboro's important tributary, Palo Comado Canyon. This is the western terminus of the SEA that lies north of State Route-101.

An important feature of this area is a small tributary of Las Virgenes Creek (and ultimately Malibu Creek) named Liberty Canyon. The underpass of State Route-101 at Liberty Canyon Road along the drainage conveys relatively less vehicular traffic than other freeway crossings within several miles, and is one of the few active wildlife passage areas along the entire extent of State Route-101 through the Santa Monica Mountains. All other watercourse and street crossings of State Route-101 are very constrained or else entirely impassible for wildlife. There are widely documented concerns

for the consequences of genetic isolation for the small band of mountain lions (*Puma concolor*) of the Santa Monica Mountains. Mountain lions that are known to use this area of the SEA to transit back and forth between the Santa Monica Mountains and the greater lion populations of the Simi Hills and north. The area north of the Liberty Canyon underpass is natural chaparral, watercourses, and grassland administered by the Santa Monica Mountains Conservancy. South of State Route-101, development is present with a very narrow corridor of natural habitat that includes valley oak (*Quercus lobata*) along the creek of Liberty Canyon.

A small island of developed area south of State Route-101 and along Liberty Canyon is excluded from the SEA. From the Liberty Canyon underpass south of State Route-101 the SEA boundary follows the north-facing side of an unnamed ridge at the southern end of the City of Agoura Hills towards the northern slopes of Ladyface Mountain. This is a chaparral-dominated area with numerous canyons and ridges supporting federally-threatened Agoura Hills dudleya (*Dudleya cymosa* ssp. *agourensis*), and one of the nine critical habitat areas in the County of Los Angeles and in the SEA for the state- and federally-endangered Lyon's pentachaeta (*Pentachaeta lyonii*), as well as other uncommon and rare plants, such as Fish's milkwort (*Polygala cornuta* var. *fishiae*), Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*), and the southern-most known occurrence of the California juniper (*Juniperus californica*) within the County. The SEA northern boundary crosses Kanan Dume Road in the area where Lindero Canyon formerly joined Medea Creek and continues its contour along the north-facing ridge of Ladyface Mountain, which also supports Agoura Hills dudleya, Lyon's pentachaeta, Ojai navarretia (*Navarretia ojaiensis*), and other rare and sensitive plants on its chaparral-covered slopes. A small area with development and fill along the south side of Kanan Dume Road has been excluded from the SEA.

The SEA boundary veers to the southwest to avoid the developed areas of Westlake Village, but includes Las Virgenes Reservoir in the SEA and three more of the critical habitat areas for the Lyon's pentachaeta. A finger includes an undeveloped section of Triunfo Canyon. A short distance southwest of Las Virgenes Reservoir, the boundary crosses Decker Canyon road and extends west to the Ventura-Los Angeles County line, which is another area of critical habitat for the Lyon's pentachaeta. Most of the critical habitat areas for Lyon's pentachaeta in the County are covered by the North Area Plan regulations for the Santa Monica Mountains, but some critical habitat areas also occur in the coastal zone. The boundary then follows the Ventura-Los Angeles County line to the southwest all the way to the coast and State Route-1 where the northern and the southern boundary join at Leo Carillo State Beach.

Vegetation

The SEA includes most of the Santa Monica Mountains range. This east-west trending range is geologically complex, and because of its unique geological history and rugged topography with many microhabitats, it has a flora that is unlike any other place in the County. There are about 900 species of vascular plants—an exceptionally diverse flora for an area of its size. (Raven et al., 1986) The County portion of the Santa Monica Mountains are characterized by steep, rugged terrain of mountain slopes and canyons, with elevations ranging from sea level to over 2,800 feet above mean sea level (MSL) at Castro Peak. The Santa Monica Mountains are bounded by the Pacific Ocean to the south, the Oxnard Plain to the west, the Los Angeles Basin to the east, and the San Fernando Valley and Simi Hills on the north. The SEA includes numerous minor and major canyons. Named canyons include Trancas Canyon, Zuma Canyon, Ramirez Canyon, Escondido Canyon, Solstice Canyon, Corral Canyon, Malibu Canyon, Carbon Canyon, Los Flores Canyon, Tuna Canyon, Topanga Canyon, Santa Ynez Canyon, Temescal Canyon, Sullivan Canyon, Lobo Canyon, Triunfo Canyon, Las Virgenes Canyon, Liberty Canyon, Palo Comado Canyon, and Stokes Canyon. Major

drainages within the SEA include the Arroyo Sequit, Zuma Canyon Creek, Malibu Creek, Los Flores Canyon Creek, Topanga Canyon Creek, Triunfo Creek, Las Virgenes Creek, and Medea Creek.

These drainages all support well-developed riparian communities, which are a type of sensitive and rare community that is essential to the biodiversity of the County. Natural watercourses provide water, food and cover for a variety of animal species and provide an ecological link between the upland and marine environments. Additionally, they contribute to regional and continental connectivity by providing shelter and forage for many migratory bird species, which maintains biodiversity over several spatial scales. Many riparian corridors within the SEA contain perennial sections that are among the last remaining major drainages in the Santa Monica Mountains in an undeveloped condition. In the canyon bottoms are riparian forests, which are sensitive habitats because of their rarity and loss to channelization and development. Most riparian forests in the Santa Monica Mountains are of western sycamore (*Platanus racemosa*) and coast live oak (*Quercus agrifolia* var. *agrifolia*), Fremont and black cottonwood (*Populus fremontii* ssp. *fremontii* and *P. trichocarpa*) and leatherleaf ash (*Fraxinus velutina*). The upstream and upper canyon ridges are dry and support coastal sage scrub, which blends with the more mesic chaparral of the lower slopes. The rich riparian community of plants supports abundant wildlife populations that include amphibians and birds dependent on surface moisture, and mule deer and mountain lion, the latter of which is an indicator of large-scale ecosystem health.

The endangered Lyon's pentachaeta (*Pentachaeta lyonii*) prefers compact, undisturbed soil on the upper coastal slope areas of many of these streams. Because such areas are often flat and may be cleared of other plants, this puts the plant in the path of development. This "daisy" is a narrow endemic of Los Angeles and Ventura counties, and has recently lost about half of its known population. Most of the critical habitat for Lyon's pentachaeta occurs in the northern area of the SEA. At the south end of the artificial Malibu Lake on Triunfo Creek, in the rolling slope area of Medea Creek that is south of the City of Agoura Hills, near the confluences of Lobo and Triunfo creeks and La Sierra Canyon and Triunfo Creek, on the east and west ridgelines of Las Virgenes Reservoir extending to the drainage junction with Triunfo Creek along Decker Road to the ridgeline area of Mulholland Highway, and in the area of Saddle Rock on the Mulholland Highway. These are about half of the areas of critical habitat named for the plant. The remainder are in nearby Ventura County extending between the Santa Susana Mountains in the north, and the Santa Monica Mountains in this area.

Because of the undisturbed conditions, with riparian forests filtering and cooling the waters, Arroyo Sequit, Malibu Creek, and Topanga Canyon still support extremely rare spawning runs of the federally-endangered southern steelhead. Historically, steelhead was known from Solstice and Zuma canyons as well, and it is likely that all the major drainages, which once had perennial water and extended to the shore in the rainy season supported this species.

The majority of the SEA consists of undisturbed open space with scattered rural residential communities and a few high-density residential developments. Open space within the SEA is mostly vegetated with dense stands of chaparral. Other types of vegetation, such as woodlands and grasslands, occur in smaller portions scattered throughout the SEA on moist or north facing slopes and canyon bottoms. Lesser amounts of coastal sage scrub are also present, primarily on low-elevation, dry south-facing slopes, ridgelines, or as early successional communities in previously disturbed areas.

Topanga Canyon State Park and Malibu Creek State Park have pristine areas of all the

characteristic habitats of the Santa Monica Mountains: chaparral, oak woodland, grasslands, and coastal sage scrub. Some of the principally-named canyons of Malibu Creek State Park with diverse riparian habitat on north-facing slopes include Fern, Mendenhall, and Lost Cabin canyons. The headwaters of the major drainages of the Santa Monica Mountains often lie outside park jurisdictions, but most retain intact natural communities that contribute to a clean water source. Many of these with scattered development are included in the SEA.

The perennial stream of Cold Creek lies in the center of a relatively undisturbed natural sandstone basin that has a diversity of flora reflecting the extreme range in physical conditions of the watershed, from cool wet streambed to hot dry rocky ridges, making the area a remarkable concentration of native vegetative diversity. Pristine stands of chaparral, southern oak woodland, coastal sage scrub, and riparian woodland all support the unusual species found in the streamside areas such as stream orchid (*Epipactis gigantea*), scarlet monkeyflower (*Mimulus cardinalis*), ocellated Humboldt lily (*Lilium humboldtii* var. *ocellatum*), big-leaf maple (*Acer macrophyllum*), and redshank (*Adenostoma sparsifolium*). Redshank has a widely disjunct distribution, with scattered populations from San Diego to Santa Barbara County. Redshank is common in the southern portion of the Cold Creek watershed, but this population and another within Decker and Encinal canyons represent two of the few localities of this species within the County. Flowering ash (*Fraxinus dipetala*), usually a diminutive tree of 15-20 feet, can grow to 40 feet here. This diversity supports good populations of stream animals: turtles, lizards, snakes, and amphibians. There are a number of private reserves and study facilities in the watershed, including a university field station. Pierce College has a collection of the plants in its herbarium and also an insect collection for the Cold Creek area.

Where drainage conditions result in moist sandstone and micro-slumping of developing soil, this creates a variety of habitats in close proximity to one another. There can be very unusual associations of species—xerophytic chaparral yucca (*Yucca whipplei*) and lance-leaf live-forever next to a diverse array of moisture-dependent ferns, mosses, liverworts, and hornworts. A north-east draining tributary of Las Flores called “Hepatic Gulch,” with a cirrhotic sandstone rock formation, has an unusual assemblage of uncommon plants and a good diversity of wildflowers. Adjacent to seasonally mesic moss-dominated areas supporting California saxifrage (*Micranthes californica*) are silver birds-foot trefoil (*Acmispon argophyllus* var. *argophyllus*), Wright’s buckwheat (*Eriogonum wrightii* var. *membranaceum*), wooly paintbrush (*Castilleja foliolosa*), redskin onion (*Allium haematochiton*), and mariposa lilies (*Calochortus* spp).

Tuna and Pena canyons are the last coast drainages of the central Santa Monica Mountains that have not had development in the watershed or between the canyon mouth and the coast. Tuna Canyon has a perennial stream. Due to the coastal exposure, the riparian woodlands in the canyon bottoms are in excellent health and support healthy wildlife populations. The extensive coast live oak woodland in the riparian area is known to support over 300 species of various plants and animals. Animals utilize the stream as a water source and forage in the chaparral and coastal sage scrub on adjacent hillsides. These areas are important to migratory song bird and waterfowl species.

Temescal, Rustic, and Sullivan canyons are excellent representatives of the dry chaparral and coastal sage scrub plant communities found in the interior canyons of the Santa Monica Mountains. The canyons are less steep than others and their open form favors vegetation with less understory growth, which provides great examples of lush intermittent stream courses. They each have hiking trails and a drier canyon flora, even within stream beds. To the east is the dense urban habitat of the City of Los Angeles. Wildlife use these canyons as linkage and movement corridors, which connect the coastal populations and those of the interior valleys.

Encino Reservoir has the best undisturbed stand of inland chaparral, coastal sage scrub and streamside vegetation remaining on the inland slope of the Santa Monica Mountains. Inland chaparral develops where the moist coastal air rarely intrudes, and its characteristic species composition is different from similar communities on the coastal side of the mountains. In addition, the freshwater habitat is present along the shores of the Reservoir, so that the overlap of habitats provides a greater number of resources than each habitat would have alone.

The sections of Las Virgenes Canyon and Medea Creek within the SEA support exceptionally diverse wildflower populations, and if rainfall patterns are propitious, wildflower fields may cover large sections of the Canyon slopes. The surrounding canyon slopes support lush growth of coastal sage scrub and other chaparral. The Canyon itself has some floral elements that are characteristic of interior or even desert conditions: the California juniper (*Juniperus californica*) is found only in the Santa Monica Mountains, and narrowleaf goldenbush (*Ericameria linearifolia*) is another interior plant that is common in this canyon and rare elsewhere in the SEA. A variety of live-forever (*Dudleya* spp.), species are present on the canyon walls and rock outcrops, including chalk lettuce (*D. farinosa*), lance-leaf live-forever (*D. lanceolata*), and federally-threatened Agoura Hills dudleya (*D. cymosa* ssp. *agourensis*). One of the critical habitat areas for Lyon's pentachaeta is in this section of the SEA.

South of Liberty Canyon is La Sierra Canyon, which is an important tributary of Triunfo Creek, with exceptional floral biodiversity. La Sierra Canyon has a flora that includes elements found in only a few known places in the Santa Monica Mountains. Some of these are the rare state and federally-endangered Santa Monica Mountains live-forever (*Dudleya cymosa* ssp. *marcescens*); the creek dogwood (*Cornus glabrata,* known only from one other site in the Santa Monicas); the giant chain fern (*Woodwardia fimbriata*, which is exceptionally large in this locality); ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*, which is also very tall in this locality), and dense stands of big-leaf maple (*Acer macrophyllum*, which is one of the uncommon, large-leaved, deciduous trees of Southern California that is an obligate of moist stream habitat); dense stands of coast live oak (*Quercus agrifolia* var. *agrifolia*, protected by County ordinance and an oak woodland management plan); and very rare anywhere in the County, dense streamside stands of California bay (*Umbellularia californica*).

Palo Comado Canyon is one of the remaining areas with the emblematic California habitat of mixed southern oak woodland and savannah on rolling grassy hills. This type of habitat was one of the first to disappear with of the arrival of European settlers and the use of water diversions for the irrigation of crops. Agriculture made way for dense urban development, and very little of the oak savannah that was typical of Southern California ranchos remain. What was left was heavily impacted by cattle grazing. Along with facilitating non-native grasses that have displaced the native fields of wildflowers, cattle often consume the oak seedlings that would otherwise have replaced oaks that succumb to old age, which converts the woodlands into grasslands. Trees in Palo Comado Canyon support abundant populations of raptors, woodpeckers, western gray squirrels, quail and other savannah species. The ridgelines around the canyons support coastal sage scrub and other kinds of chaparral. The savannah, canyons, and ridgetop chaparral combine to support the connectivity that wildlife and plant populations need to sustain themselves, and this area has been named in a number of studies as very important to the continued genetic exchange and population replenishment of the County and other parts of Southern California.

Vegetation within the SEA is comprised of a large variety of community types. The diversity of the communities reflects the topography of the Santa Monica Mountains. The southern slopes are strongly affected by moist marine weather, while the northern slopes are influenced by drier inland

weather conditions. In addition, the steepness of many slopes causes sharp differences in vegetation on either side of the ridges. All plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive plant species and plant communities occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA, including chaparral, redshank chaparral, coastal sage scrub, non-native grassland, native grassland, walnut woodland, valley oak woodland, coast live oak woodland, southern willow scrub, cottonwood-willow riparian forest, oak riparian forest, salt marsh, sycamore-alder woodland, freshwater marsh, and disturbed communities are presented below.

Chaparral: Consists of broad-leafed or needle-leafed, sclerophyllous (hard-leafed), medium height to tall shrubs that form a dense cover on steep slopes below 5,000 feet in Southern California. Dominant species found within this community include ceanothus, toyon, scrub oak, sugar bush, holly-leaved cherry, holly leaf redberry, chamise, laurel sumac, and manzanita. This plant community occurs throughout the SEA and occupies most of the higher elevations and steep slopes.

Corresponding MCV communities:

- Adenostoma fasciculatum (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Arctostaphylos glandulosa* (Eastwood's manzanita chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus megacarpus* (big pod ceanothus chaparral) Shrubland Alliance
- *Ceanothus spinosus* (greenbark ceanothus chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Redshank Chaparral: A very similar community to the chaparral described above, with the exception that red shank is the dominant species with lesser amounts of other chaparral species. This community is less common. It occurs in small patches, on steep slopes throughout the SEA.

Corresponding MCV communities:

- *Adenostoma sparsifolium* (redshank chaparral) Shrubland Alliance

Coastal Sage Scrub: Consists of drought-deciduous, low, soft-leafed shrubs and herbs on gentle to steep slopes under 1,500 feet in elevation. This community is dominated by California sagebrush, California buckwheat, black sage, purple sage, and California encelia. Coastal sage scrub is distributed throughout the SEA along dry ridgelines, slopes, and other areas previously disturbed by fire.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Diplacus aurantiacus* (bush monkeyflower scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum cinereum* (ashy buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Hazardia squarrosa* (sawtooth golden bush scrub) Shrubland Alliance
- *Isocoma menziesii* (Menzie's golden bush scrub) Shrubland Alliance
- *Lotus scoparius LotusAcmispon scoparius* ([*Acmispon glaber*] deer weed scrub) Shrubland Alliance
- *Lupinus albifrons* (silver bush lupine scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Native Grassland: Consists of at least 10 percent cover of native herbaceous plants (grasses and forbs) with the remaining coverage similar to non-native grasslands. Small patches of native grassland can be found scattered throughout the SEA, mostly in openings in coastal sage scrub and mixed with non-native grasslands.

Grassland communities consist of low, herbaceous vegetation that is dominated by grasses. Grasslands also harbor native forbs and bulbs, as well as naturalized annual forbs. Grasslands within the SEA include both non-native grasslands and native grasslands. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include wild oat, slender oat, red brome, ripgut brome, and herbs, such as black mustard and wild radish. Non-native grasslands are located in small to large patches throughout the SEA in previously disturbed areas, cattle pastures, valley bottoms, and along road sides.

Corresponding MCV communities:

- *Avena* (*barbata, fatua*) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus, hordeaceus*)-*Brachypodium distachyon* Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus, barbatus* [*Bromus madritensis* ssp. *rubens*]) Semi-Natural Herbaceous Stands
- *Lolium perenne* ([*Festuca perennis*] perennial rye grass fields) Semi-Natural Herbaceous Stands

Coast Live Oak Woodland: Is dominated by coast live oak and has a poorly developed shrub layer, which may include toyon, currant, gooseberry, laurel sumac, elderberry, and mulefat. Some coast live oak woodlands in the area include scattered California walnut or valley oaks. This community occurs throughout the SEA, often along canyon bottoms and more mesic, north-facing slopes.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Valley Oak Woodland: An open woodland community dominated by valley oak. The understory is a grassy savannah composed mostly of non-native grasses. Valley oak woodland occurs mostly on the north slope of the Santa Monica Mountains in shaded ravines and on north-facing slopes.

Corresponding MCV communities:

- *Quercus lobata* (valley oak woodland) Woodland Alliance

Walnut Woodland: An open woodland dominated by Southern California black walnut. Occurring on moist, fine-textured soils, the open tree canopy usually has a grassy understory. Other characteristic species include coast live oak, sugar bush, and skunk bush. This community occurs mostly on the north slope of the Santa Monica Mountains in shaded ravines and on north-facing slopes.

Corresponding MCV communities:

- *Juglans californica* (California walnut groves) Woodland Alliance

Southern Willow Scrub: A riparian community consisting of dense, broad-leafed, winter-deciduous riparian thickets occurring within and adjacent to watercourses. The dominant species of this community within the SEA are arroyo willow with lesser amounts of mulefat. This community occurs in segments along portions of several of the drainages as well as along the periphery of many of the ponds and lakes throughout the SEA.

Corresponding MCV communities:

- *Salix exigua* (sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Cottonwood-Willow Riparian Forest: An open broad-leafed winter-deciduous riparian forest dominated by Fremont cottonwood, black cottonwood, black willow, and red willow. This community occurs in segments along of many of the drainages, ponds, and lakes throughout the SEA.

Corresponding MCV communities:

- *Populus fremontii* (California sycamore woodlands) Forest Alliance
- *Salix gooddingii* (black willow thickets) Woodland Alliance
- *Salix laevigata* (red willow thickets) Woodland Alliance
- *Populus trichocarpa* (black cottonwood forest) Forest Alliance

Sycamore-Alder Riparian Woodland: A tall, open, broad-leafed, winter-deciduous streamside woodland dominated by western sycamore and alder. These stands often form a closed canopy forest and even may appear as trees scattered in a shrubby thicket of sclerophyllous and deciduous species. This community is found infrequently within the SEA along the lower reaches of several major creeks.

Corresponding MCV communities:

- *Platanus racemosa* (California sycamore woodlands) Woodland Alliance
- *Alnus rhombifolia* (white alder groves) Forest Alliance

Oak Riparian Forest: An open woodland of dense evergreen sclerophyllous riparian woodland dominated by coast live oak. This type appears to be richer in herbs and poorer in understory shrubs than other riparian communities. This community occurs along many streams and canyon bottoms scattered throughout the SEA.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Freshwater Marsh: Develops in areas of still or slow-moving permanent freshwater. This community is dominated by the perennial, emergent monocot cattails, which reach a height of four to five meters and often form a closed canopy. Bulrushes are dominant below the cattail canopy. Freshwater marsh is relatively uncommon. It occurs in small patches in natural or created sinks with water sources.

Corresponding MCV communities:

- *Phragmites australis* (common reed marshes) Herbaceous Alliance and Semi-Natural Stands
- *Lepidium latifolium* (perennial pepper weed patches) Semi-Natural Herbaceous Stands
- *Eleocharis macrostachya* (pale spike rush marshes) Herbaceous Alliance
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance

- *Typha* (*angustifolia, domingensis, latifolia*) (cattail marshes) Herbaceous Alliance
- *Sarcocornia pacifica* (*Salicornia depressa*) (pickleweed mats) Herbaceous Alliance
- *Juncus arcticus* (var. *balticus, mexicanus*) (Baltic and Mexican rush marshes) Herbaceous Alliance
- *Juncus effusus* (soft rush marshes) Herbaceous Alliance
- *Lemna* (*minor*) *and Relatives* (duckweed blooms) Provisional Herbaceous Alliance

Salt Marsh: Similar to the freshwater marsh described above, but with more salt-tolerant hydrophytes present. Species associated with this community include cattails, pickleweed, and saltgrass. Salt marsh is rare. Within the SEA it is known only from Malibu Lagoon and in the County, and only two other places.

Corresponding MCV communities:

- *Distichlis spicata* (salt grass flats) Herbaceous Alliance
- *Spartina foliosa* (California cordgrass marsh) Herbaceous Alliance
- *Arthrocnemum subterminale* (Parish's glasswort patches) Herbaceous Alliance
- *Atriplex lentiformis* (quailbush scrub) Shrubland Alliance

Rock Outcrop: A sparsely vegetated community occurring on cliffs and rock outcroppings of sedimentary, metamorphic, and volcanic rocks along the ridges and peaks of the hills and mountains. Between the rocks and in the crevices, the few plants found are usually representative of a chaparral species composition. Other plants often found on the rock faces in protected areas include *Dudleya*, *Selaginella*, and various lichens.

Corresponding MCV communities:

No corresponding communities at this time

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA includes non-native grasses and a high proportion of weedy species, including black mustard and thistle species. Several disturbed areas are scattered throughout the SEA and take the form of residential developments, paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Corresponding MCV communities:

No corresponding communities at this time

Wildlife

Wildlife within the SEA is generally diverse and abundant due to large acreages of natural open space and diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the SEA and

adjoining areas constitute a functional ecosystem for a variety of wildlife species, both within the SEA and as part of the regional ecosystem.

The analysis of invertebrates is severely limited due to the lack of data; the SEA, however, undoubtedly supports healthy populations of a diverse assortment of invertebrate species. Amphibian populations are plentiful in the SEA due to the high moisture content provided by coastal conditions as well as the large number of drainages and year-round water supplies. The SEA is also likely to support a variety of amphibians within the moister woodland areas and canyon bottoms. Many habitat characteristics essential to reptiles are present within the SEA. These include rock outcroppings that allow for high visibility and small mammal burrows for cover and escape from predators and extreme weather. These characteristics, as well as the variety of habitat types present, are likely to support a wide variety of reptilian species.

The scrubland, woodland, riparian, and grassland habitats in the SEA provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, the SEA encompasses many year-round water sources located throughout the SEA and abundant raptor foraging, perching, and nesting habitat along the northern slopes of the Santa Monica Mountains. The southern edge of the SEA, along the coast, is part of the Pacific Flyway. The combination of these resources, as well as the confluence of many community types provides an unusually high diversity of bird species. Mammal populations within the SEA are diverse and reflect the large size of the SEA and great variation in topography and community types.

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The SEA contains major features that are important to wildlife movement. For the mammals and other large terrestrial wildlife, it is important to recognize the crossing area of State Route-101 freeway at Liberty Canyon, and this has been detailed in the General Boundary and Resources Description section. Future highway modifications in this far western area of the County may take the need for wildlife connectivity into account. On the eastern end of the mountains (separated from the SEA by the communities of Brentwood and Encino in the City of Los Angeles) the California Department of Transportation, or Caltrans, has undertaken widening conversion of one of the bridges to incorporate a vegetated area on the bridge that will encourage wildlife transit between the mountain sections west and east of Interstate-405. This is the first such endeavor in County.

The many natural drainages and ridgelines of the Santa Monica Mountains connect populations in a netlike web, and development should always take account of the importance of these natural areas to wildlife connectivity.

The major coastal drainages with natural habitat shading and cooling the waters support a very unique and rare wildlife movement, which is the spawning runs of the federally-endangered southern steelhead. Spawning run areas and young fish habitat are in critical habitat areas of Arroyo Sequit, Malibu, and Topanga Canyons. Historically, steelhead were known from Solstice and Zuma canyons as well, and it is likely that all the major drainages that once had perennial water and extended to the shore in the rainy season supported this species.

Although wildlife movement is hampered by rural development in the SEA, animals are still able to move through the Santa Monica Mountains in many areas. Due to its large size and topographic complexity, linkages in many directions occur within the SEA. However, there are also various bottlenecks. Edelman (1990) identifies Malibu Creek State Park as the central core habitat area in the Santa Monica Mountains, serving as a connective hub between the Simi Hills to the north and the open space preserves of Topanga State Park to the east, and Mugu State Park to the west (which is near the Ventura-Los Angeles County line, but within Ventura County). These linkages allow movement among large open space areas within the SEA as well as between areas outside the SEA, such as the Simi Hills and the western extent of the Santa Monica Mountains in Ventura County. The genetic flow through these areas is crucial in maintaining the diversity and viability of the species within the Santa Monica Mountains. Open space linkages between Kanan Road and Calabasas Parkway along State Route-101, as indicated by the National Park Service, are of particular importance for continued connectivity of wildlife populations, due to a lack of alternative routes and encroachment of development (Nelson, 2000). Although there are significantly large open spaces within the SEA, maintaining habitat linkages between them is critical in providing for long-term sustainability. A wide variety of wildlife use linkages throughout the SEA, including mountain lion, coyote, mule deer, bobcat, and a number of medium-sized mammals.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The SEA has a number of these for a number of species, as discussed in the General Boundary and Resources Description section. The Santa Monica Mountains SEA has critical habitat for the southern steelhead (fish), the tidewater goby, Braunton's milkvetch, and Lyon's pentachaeta. There is proposed critical habitat for the western snowy plover in the SEA.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include coastal sage chaparral scrub, native grassland, valley oak woodland, walnut woodland, southern willow scrub, southern cottonwood-willow riparian forest, sycamore-alder woodland, southern coastal live oak riparian forest, fresh-water swamp, and alkali swamp, all of which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following species occur, or are known to have occurred, or have the potential to occur in the SEA area:

- Santa Susana tarplant (*Deinandra minthornii*) CDFG Rare, RPR 1B.2
- Lyon's pentachaeta (*Pentachaeta lyonii*) FE, SE, RPR 1B.1
- Beach spectaclepod, (*Dithyrea maritima*) ST, RPR 1B.1
- Blochman's dudleya (*Dudleya blochmaniae* ssp*. blochmaniae*) FT, RPR 1B.2
- Marcescent dudleya (*Dudleya cymosa* ssp. *marcescens*) FT, RPR, 1B.2]
- Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*) FT, RPR 1B.2
- Braunton's milk-vetch (*Astragalus brauntonii*) FE, RPR 1B.1
- Salt marsh bird's beak (*Chloropyron maritimum* ssp. *maritimum*) FE, SE, RPR 1B.2

In addition, the following species considered by CNPS to be rare, threatened or endangered have the potential to occur:

- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) RPR 2.2
- Southern tarweed (*Centromadia parryi* ssp*. australis*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* var*. coulteri*) RPR 1B.1
- Coulter's saltbrush (*Atriplex coulteri*) RPR 1B.2
- Parish's brittlescale (*Atriplex parishii*) RPR 1B.1
- Mud nama (*Nama stenocarpum*) RPR 2.2
- Salt spring checkerbloom (*Sidalcea neomexicana*) RPR 2.2
- Ojai navarretia (*Navarretia ojaiensis*) RPR 1B.1
- Parry's spineflower (*Chorizanthe parryi* var*. parryi*) RPR 1B.1
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2

Sensitive Animal Species

The following vertebrate species are state and/or federally-listed endangered or threatened, and are known to occur or have the potential to occur in the SEA:

- Tidewater goby (*Eucyclogobius newberryi*) FE, SSC
- Steelhead – Southern California ESU (*Onchorynchus mykiss irideus*) FE, SSC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, ABC, SSC, BCC
- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, FSS, BCC
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, SE, ABC
- American peregrine falcon (*Falco peregrinus anatum*) FD, SD CDF, CDFG Fully Protected, BCC
- Bald eagle (*Haliaeetus leucocephalus*) FD, SE, CDF, CDFG Fully Protected, FSS, BCC
- Bank swallow (*Riparia riparia*) ST
- California least tern (*Sternula antillarum browni*) FE, SE, ABC, CDFG Fully Protected
- Least Bell's vireo (*Vireo bellii pusillus*) FE, SE, ABC

The western snowy plover, which feeds and resides in the wrack line areas, has designated critical habitat on Zuma Beach from Trancas Canyon to the northeastern side of Point Dume (within the Point Dume CRA). This is proposed to expand on Point Dume, but also to expand to include Malibu Beach, from the pier to Malibu Point, and the area around the seaward side of the Malibu Lagoon, which is included in this SEA (where it contacts the Malibu Coastline CRA).

The southern steelhead lives in the coastal and oceanic marine waters for most of its life. It uses the coastal streams for spawning runs to breed. Some fish may die on these runs, but many of this particular species return to the ocean and may spawn again. The creeks become the habitat for the first year of the young fish's lives. Here they mature to smolts and make their run to the ocean. In the ocean, they mature and spend most of their lives. The Arroyo Sequit has the lower section and much of its west fork designated as critical habitat, with known, naturally occurring spawning beds and habitat for young fish. The lower areas of Malibu Creek and Topanga Creek are also designated critical habitat.

In addition, following CDFG-listed Special Animals have the potential to utilize habitats within the SEA:

- Callippe silverspot butterfly (*Speyeria callippe callippe*) FE
- Arroyo chub (*Gila orcutti*) FSS, SSC
- California red-legged frog (*Rana draytonii*) FT, SSC
- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Coast range newt (*Taricha torosa*) SSC

- Silvery legless lizard (*Anniella pulchra pulchra*) SSC, FSS
- Southwestern pond turtle (*Emys marmorata*) BLMS, SSC, FSS
- San Diego mountain kingsnake (*Lampropeltis zonata pulchra*) FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, SSC, FSS
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, SSC, FSS
- Cooper's hawk (*Accipiter cooperii*) CDFG Watch List
- Sharp-shinned hawk (*Accipiter striatus*) CDFG Watch List
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Bell's sage sparrow (*Amphispiza belli belli*) ABC, CDFG Watch List, BCC
- Golden eagle (*Aquila chrysaetos*) CDF, CDFG Fully Protected, CDFG Watch List, BCC
- Short-eared owl (*Asio flammeus*) ABC, SSC
- Long-eared owl (*Asio otus*) SSC
- Coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) SSC, FSS, BCC
- California horned lark (*Eremophila alpestris actia*) CDFG Watch List
- Northern harrier (*Circus cyaneus*) SSC
- Black swift (*Cypseloides niger*) ABC, SSC, BCC
- Yellow warbler (*Dendroica petechia brewsteri*) SSC, BCC
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- Merlin (*Falco columbarius*) CDFG Watch List
- Prairie falcon (*Falco mexicanus*) CDFG Watch List, BCC
- Yellow-breasted chat (*Icteria virens*) SSC
- Least bittern (*Ixobrychus exilis*) SSC, BCC
- Loggerhead shrike (*Lanius ludovicianus*) SSC, BCC
- California brown pelican (*Pelecanus occidentalis californicus*) FD, SD, CDFG Fully Protected
- Pallid bat (*Antrozous pallidus*) BLMS, SSC, FSS, WBWG: High Priority

- Townsend's big-eared bat (*Corynorhinus townsendii townsendii*) BLMS, SSC, FSS, WBWG High Priority
- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High Priority
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High Priority
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- South coast marsh vole (*Microtus californicus stephensi*) SSC
- Occult little brown bat (*Myotis lucifugus occultus*) CDFG Special Animals List, WBWG Medium Priority
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) SSC, FSS
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE SANTA MONICA MOUNTAINS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The SEA provides habitat for the following listed species: Lyon's pentachaeta (FE, SE); beach spectaclepod (ST); Blochman's dudleya (FT); marcescent dudleya (FT); Santa Monica dudleya (FT); Braunton's milk-vetch (FE); salt marsh bird's beak (FE, SE); tidewater goby (FE); steelhead – Southern California ESU (FE); western snowy plover (FT); western yellow-billed cuckoo (SE); southwestern willow flycatcher (FE, SE); American peregrine falcon (SE); bald eagle (FT); bank swallow (ST); California least tern (FE, SE); least Bell's vireo (FE, SE). The SEA contains designated critical habitat for Lyon's pentachaeta, Braunton's milk-vetch, tidewater goby, steelhead, and western snowy plover.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Upper La Sierra Canyon contains an unusually rich and diverse stand of canyon flora, including marcescent dudleya, creek dogwood, and many unusually large specimens of other rare plant species; Malibu Lagoon is the only intact natural lagoon between Point Mugu in Ventura County and Anaheim Bay in Orange County; Malibu Canyon contains a unique mix of floral species that are uncommon in the region, such as black cottonwood and leather leaf ash, as well as a regionally unique mixture of inland and coastal species; regionally

	Criterion	Status	Justification
			rare volcanic rock formations create unique communities where they occur.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Malibu Lagoon is the only natural lagoon in the County; upper La Sierra Canyon contains an unusually rich and diverse stand of canyon flora, including marcescent dudleya, creek dogwood, and many unusually large specimens of other rare plant species; and Malibu Canyon contains a regionally unique mix of floral species htat are uncommon in the County, such as black cottonwood and leather leaf ash, as well as a unique mix of inland and coastal species.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The Malibu Lagoon and the upstream riparian woodland in Malibu Creek is an important migrating bird refuge, with over 200 species recorded. Tuna and Pena canyons are an important area to migratory birds due to their combined qualities of healthy vegetation, riparian woodland, surface moisture, undeveloped land, and an unobstructed opening to the coast. The SEA also contains habitat linkages between large open space areas within the SEA and areas outside the SEA, such as the Simi Hills and the western extent of the Santa Monica Mountains in Ventura County. Such linkages are crucial in maintaining regional plant and animal population health and viability.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The SEA includes a myriad of unique and pristine natural areas that are important for nature study and scientific research; the range of extremes of many species, such as the California juniper, linear-leaved goldenbush, splendid mariposa lily (*Calochortus venustus*), and valley oak; and disjunct and unique populations of redshank, island mountain-mahogany, lyre snake, mountain quail, hirsute rain-beetle, and the Jerusalem cricket.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Zuma Canyon is one of the last major drainages in the Santa Monica Mountains with a year-round stream that supports a rich riparian community and remains in an undeveloped state; Cold Creek includes an excellent example of an undisturbed natural sandstone basin with springs and a perennial stream; Tuna and Pena canyons are the last drainages in the central and eastern Santa Monica Mountains that have no development between the canyon mouth at the coast and upper areas of the watershed; Palo Comado and Cheseboro canyons support one of the last examples of an oak woodland savannah of any significant size in the County; Temescal, Rustic, and Sullivan canyons represent contiguous, self-contained watersheds that are large enough to support representative samples of native flora and fauna; the area surrounding Encino Reservoir supports the best undisturbed stand of an inland chaparral, coastal sage scrub, and streamside vegetation remaining on the inland slope of the Santa Monica Mountains.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating

grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Santa Susana Mountains and Simi Hills SEA

Location

General

The Santa Susana Mountains and Simi Hills Significant Ecological Area (SEA) is located northwest of the San Fernando Valley within unincorporated areas of the County and the City of Los Angeles, west of Chatsworth. The area is south of State Route-126 and the Santa Clara River, west of the Interstate-5, and includes much of the Santa Susana Mountains to the north, the Santa Susana Pass, Chatsworth Reservoir, and the eastern portion of the Simi Hills to the south. This SEA encompasses much of the natural area of the Santa Susana Mountains in the County. The north face of the Santa Susana Mountains is the southwestern watershed of the Santa Clara River in the County, and on the south face, the Santa Susana Mountains are part of the direct coastal watershed as well as part of the watershed of the Los Angeles River. The Simi Hills are part of the direct coastl drainage in their southern area. The variations in vegetation communities are extensive. The area in the Santa Susana Mountains covered by the SEA is considered an important connective wildlife corridor among the San Gabriel Mountains, the Santa Clara River, and the Santa Monica Mountains.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Calabasas, Canoga Park, Oat Mountain, Santa Susana, Val Verde, and Newhall.

General Boundary and Resources Description

The entire western boundary of the SEA follows the Ventura-Los Angeles County line from El Escorpion Park, west of the intersection of Valley Circle Boulevard and Vanowen Street in the West Hills community of the San Fernando Valley, and north to an area just south of the Santa Clara River near Salt Canyon Road. El Escorpion Park is adjacent to state park land just across the Ventura-Los Angeles County line. The small ridgeline where the SEA begins just south of El Escorpion Park separates the coastal drainage of Las Virgenes (tributary of Malibu Creek) from drainages that flow into the San Fernando Valley and the Los Angeles River. El Escorpion Park is at the southern end of Bell Canyon Park, which is also on Ventura-Los Angeles County line. The watercourse of Bell Canyon flows through the park. The SEA continues north, including the natural watershed of Dayton Canyon. Here on the southern side of Dayton Canyon is designated critical habitat for the Braunton's milk vetch (*Astragalus brauntonii*), which is a locoweed that prefers a substrate of intermixed sandstone and carbonate beds, which is probably deposited at the margins of a former seacoast. The SEA circles around the community of Lakeside Park , which is excluded from the SEA, and then encircles and includes the Chatsworth Reservoir along boundaries of private property. The western boundary of the SEA follows the Ventura-Los Angeles County line, but bends to exclude development in upper Woolsey Canyon and Chatsworth Lake Manor.

From Chatsworth Reservoir, the SEA continues north with the west side along the Ventura-Los Angeles County line and the east side tracing natural habitat at the edge of the Simi Hills and the San Fernando Valley. The SEA extends eastward to include all of the Santa Susana Pass area, much of which is preserved in the Santa Susana Pass State Historic Park. Just across the Ventura-

Los Angeles County line near State Route-118 in Ventura County are Corriganville Park, a former and current natural movie production area, and Rocky Peak Park. Corriganville is a regional park of the City of Simi Hills; Rocky Peak Park is administered by the Santa Monica Mountains Conservancy. Rocky Peak Park is the former Runkle Ranch and stretches from State Route-118 five miles northward to Las Llajas Canyon. The Park is a vital wildlife habitat linkage between the Simi Hills and the Santa Susana Mountains. Spectacular sandstone boulders, outcroppings, oak savannahs, and perennial water sources provide diverse habitat for vertebrates and a number of rare plants. The Ventura-Los Angeles County line and the SEA boundary cross directly over Rocky Peak here.

A very important wildlife passage between the Santa Susana Mountains and the Simi Hills is just west of the Ventura-Los Angeles County line connecting Corriganville Park and the Runkle Ranch. It is a broad tunnel under the freeway, which enabled the connection of the property that was divided by constructing State Route-118. This tunnel connects dirt roads and trails on either side, and is regularly used by mountain lions and other wildlife.

Most of the SEA from State Route-118 northward is designated critical habitat for the coastal California gnatcatcher (*Polioptila californica californica*), which is a diminutive bird that is becoming rare due to loss of its preferred habitat, which is coastal sage scrub. The critical habitat for this bird extends across the Ventura-Los Angeles County line along the extent of the Santa Susana Mountains into Ventura County.

North of State Route-118, the SEA excludes development in the area of Hialeah Springs (but includes the springs), and circles round the development to include the more sparse settlement in the Deer Lake Highlands area. The SEA boundary goes north along the watercourse of Browns Canyon to the confluence with Mormon Canyon. Here the SEA boundary climbs the ridgeline that separate Browns Canyon and Mormon Canyon to include Browns Canyon and the Michael D. Antonovich Regional Park at Joughin Ranch, and exclude the Mormon Canyon. Continuing up the ridge to its origin on the crest of Oat Mountain, the SEA boundary turns eastward along the ridgeline, excluding the oil fields in the upper reaches of Mormon Canyon and including the extensive natural areas of the north slope of the Santa Susana Mountains.

Along the Ventura-Los Angeles County line north of Rocky Peak, the SEA boundary crosses Blind Canyon (draining to San Fernando Valley), then Llajas Canyon (draining to Simi Valley and ultimately Mugu Lagoon), then El Toro and Chivo canyons (also draining to Mugu Lagoon). Northwest of Chivo, the crest of the Santa Susana Mountains is crossed, and drainages are tributaries of Salt Canyon and the Santa Clara River. The north edge of the critical habitat for the coastal California gnatcatcher is crossed near the crest, where the south-facing slopes that favor coastal sage scrub give way to the ridgeline and north-facing slopes that promote denser chaparral and oak woodlands. At the northern boundary of the SEA, the Santa Clara River SEA is contiguous as is the critical habitat for the state and federally-endangered least Bell's vireo (*Vireo bellii pusillus)*, which is a small bird that usually nests next to perennial water.

From the northwesterly corner, the boundary travels east along the north side of Salt Canyon, and then along the northern side of the Salt Canyon East Fork. Where the East Fork turns south, the SEA boundary continues east to encompass the steeper southern areas along Potrero Canyon and all of the Pico Canyon drainage south of Potrero. The SEA boundary is truncated at the Stevenson Ranch development, including the Wickham Canyon tributary of Pico in the SEA, but excluding most of Dewitt Canyon. This boundary of the SEA is essentially following the northern edge of the Salt Creek open space that was approved with the Newhall Ranch Specific Plan. In the vicinity of Pico

Canyon, the boundary continues eastward to encompass the Lyon Canyon watershed and an unnamed watershed just north of Lyon up to the west side of Interstate-5. Along Interstate-5, the SEA boundary continues along the line of natural vegetation (west and southwest side of Gavin Canyon) including the watersheds of tributaries Towsley, Wiley, Leaming, Rice, and East canyons. The boundary continues east along the western edge of Interstate-5 to an area just west of the Angeles City line, near the interchange with State Route-14. Here the boundary excludes the drainage of Sunshine Canyon, which is involved in the Sunshine Canyon Landfill used by both the City of Los Angeles and the County. Critical habitat for the coastal California gnatcatcher is the watersheds of Towsley, Wiley, Rice, and East canyons south of the Interstate-5 below about the 2400 feet elevation contour.

North across the Interstate-5 is the Newhall Wedge. The Newhall Wedge is a very rugged part of the Santa Susana Mountains, with substantial natural vegetation of oak woodlands, chaparral, and coastal sage scrub. The Newhall Wedge is truncated by the flood plains of tributaries of the South Fork of the Santa Clara River to the north, east and west, and these flood plains have had extensive development as the City of Santa Clarita. (Gavin Canyon is one of these tributaries.) Important connective areas are the road crossings of the Interstate-5 and State Route-14. The connection to the Santa Clara River SEA is the Los Pinetos Road underpass of the State Route-14. Consistent wildlife movement has been recorded with motion-activated cameras there. The Weldon Canyon Road overpass of the Interstate-5 is another connection for the Newhall Wedge with the main part of the SEA. The Old Road underpass of the Interstate-5 is a broad connection. The Calgrove underpass is another broad connection, but busy with traffic. Natural areas are adjacent to all these under- and overpasses. The South Fork of the Santa Clara River is formed by the junction of Towsley, Wiley and East canyons in the northeast corner of Michael D. Antonovich Open Space. Its underpass of Interstate-5 has a natural bottom that is used frequently by wildlife, but on the east side of Interstate-5 there is a series of 15 feet drops and channeled sides, which is unlikely that terrestrially-tied wildlife would continue into the populated parts of the City of Santa Clarita along the South Fork. Critical habitat for the coastal California gnatcatcher is in most of the Newhall Wedge part of the SEA between the Interstate-5 and the Sierra Highway that is just west of State Route-14.

On the west side of Sunshine Canyon, a broad lobe of the SEA extends along the ridgeline, which separates Sunshine and Bee Canyon to include Bee Canyon Park and Mission Point of O'Melveny Park. This is an area with walnut woodlands, oak woodlands, grasslands, and chaparral including coastal sage scrub, which is the diverse and green vegetation typical of the Santa Susana Mountains. Critical habitat for the coastal California gnatcatcher covers O'Melveny Park, except for the ridgeline of Mission Point, which is above the 2400 feet contour. The SEA boundary travels west from Mission Point along the ridgeline above the Aliso Canyon Oil Field and turns south at the western edge of the Aliso Canyon Oil Field, along the ridgeline between Mormon and Browns canyons. Critical habitat for the coastal California gnatcatcher extends below about the 2400 feet contour (including Mormon and Browns canyons) and roughly is within the SEA north of State Route-118.

The SEA includes a variety of topographic features; the northern portion of the SEA encompasses Oat Mountain and much of the Santa Susana Mountains from the Ventura-Los Angeles County line east to Interstate-5. Portions of many of the canyons associated with the Santa Susana Mountains and Oat Mountain are also included, such as Salt Canyon, Potrero Canyon, Pico Canyon, Towsley Canyon, El Toro Canyon, Sulphur Canyon, Devil Canyon, Ybarra Canyon, Browns Canyon, Bee Canyon, and Mormon Canyon. Several perennial stream areas occur within these canyons, and there are many natural springs. The north slopes of the Santa Susana Mountains are within the Santa Clara River watershed, which drains the Los Padres National Forest to the north, the Angeles

National Forest to the northeast and east, and the Santa Susana Mountains to the south and southeast. The remainder of the SEA is within the Los Angeles River watershed. The majority of the land in the SEA is natural open space with very sparse disturbances in the form of ranches, oil wells, and unimproved access roads. The SEA consists of east-west and northwest trending primary ridges and north-south trending secondary ridges.

The peak of Oat Mountain represents the highest point in the SEA at 3,747 feet above mean sea level (MSL). From Oat Mountain, one can appreciate the diverse influences that create extremely diverse habitat within this SEA. One can see downstream along the Santa Clara River to the mouth of the Pacific Ocean and to the northern Channel Islands. Across the San Fernando Valley are the Santa Monica Mountains, and the Simi Hills enclose the west end of the Valley. To the east are the ascending ridges of the San Gabriel Mountains, and to the northeast the Santa Clara River continues upstream towards the Antelope Valley and the Mojave Desert. Coastal, valley, montane, and desert influences all meet within this small mountain range.

Open space within the SEA supports this great variety of communities, but is dominated by chaparral, oak woodlands, coastal sage scrub, bigcone Douglas-fir-canyon oak woodland, and grasslands; however, there are numerous examples of special vegetation. Not uncommon are cherry woodlands, which are dominated by holly leaf cherry (Prunus ilicifolia). These mountains are a meeting area of the (regular) Douglas fir (*Pseudotsuga menziesii*) and the bigcone Douglas-fir (*Pseudotsuga macrocarpa*). There are a number of special endemic plants, such as the Santa Susana tarweed (*Deinandra minthornii*), which is a tarplant like few others since it is perennial. Its distribution spreads through the Simi Hills and into the Santa Monica Mountains, but it is primarily at home among the sandstone boulders and terraces, which prevail in the Santa Susana Mountains. The Santa Susana Mountains are the only known place in the County with members of the uncommon Palmer's oak (*Quercus palmeri).* This desert oak can be very long-lived. A clone found in Riverside County was judged to have started from an acorn in the last Ice Age, over 10,000 years ago. Other oaks with groves in the Santa Susanas include coast live oak (*Quercus agrifolia*), valley oak (*Q. lobata*), canyon live oak (*Q. chrysolepis*), scrub oak (*Quercus berberidifolia*), and interior live oak (*Q. wislezenii*). The numerous creeks and canyons support riparian scrub and woodland communities with oaks, sycamores, and willows. There are walnut woodlands of the California black walnut (*Juglans californica*) mixed with flowering ash (*Fraxinus dipetala*) and Mexican elderberry (*Sambucus mexicana*) and coast live oak. Flowering ash may be a tree up to 60 feet tall in the Santa Susana Mountains, whereas it usually is a low tree or even spindly shrub. The woodlands dominated by walnuts and flowering ash appear to be unique to the Santa Susana Mountains. The bigcone Douglas-fir-canyon live oak forest at higher elevations represents one of the northwesternmost examples of this community. At its southern end, the SEA includes the eastern portion of the Simi Hills, including the east-facing slopes descending from Chatsworth Peak. Chatsworth Reservoir forms a portion of the south boundary and is currently dry, except for a small detention basin north of the reservoir.

Chatsworth Reservoir is now dry and is a superfund clean-up site due to the dumping of chemicals from a rocket facility that used to be in the Simi Hills. However, it has a variety of very interesting habitat with several protected avian communities of songbirds and geese, which makes it valuable for bird study by students, researchers, and naturalists. There is a perennial pond at the north end that supports freshwater marsh, which is an extremely scarce habitat in the County and Southern California. This pond is on the Pacific Flyway, and supports numerous kinds of waterfowl during the spring and fall migration periods, especially because of the adjacent grasslands. The periphery of the reservoir is savannah, with a mixture of valley and coast live oaks (*Quercus lobata* and *Q. agrifolia*), some in small stands.

The majority of the SEA is within the unincorporated area of the County.

Vegetation

The plant communities within the SEA are composed of numerous plant species. These plant species are adapted to a Mediterranean climate with a cool, wet season followed by a hot, dry season. Due to the topographic complexity and coastal and desert influences, the SEA supports a wide diversity of plant species.

Plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium of the Los Angeles County SEAs.* Sensitive plant species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of each plant community present within the SEA are given below. These include chaparral, coastal sage scrub, alluvial scrub, coast live oak woodlands, valley oak woodland, mainland cherry forest, non-native grassland, native grassland, southern willow scrub, southern cottonwood-willow riparian forest, and disturbed communities.

Chaparral: Consists of a broad mix of evergreen species and generally occurs below 5,000 feet in Southern California. Dominant species consist of broad-leaved or needle-leafed sclerophyllous (hard-leafed) shrubs, forming a dense, impenetrable cover with little or no understory growth. The understory typically consists of considerable accumulation of leaf litter. In areas of less dense shrub cover, the understory consists of non-native grasses and other annual forbs. Dominant species include chamise, laurel sumac (*Malosma laurina*), hoary-leaf ceanothus (*Ceanothus crassifolius*), chapparal whitethorn (*Ceanothus leucodermis*), and toyon (*Heteromeles arbutifolia*). Chaparral is the dominant plant community within the SEA and covers many of the steep slopes and hillsides in the upper elevations.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus crassifolius* (hoary leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus leucodermis* (chaparral whitethorn) Shrubland Alliance
- *Ceanothus megacarpus* (big pod ceanothus chaparral) Shrubland Alliance
- *Ceanothus spinosus* (greenbark ceanothus chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Coastal Sage Scrub Communities: Consist of drought-deciduous, low, soft-leaved shrubs and herbs on gentle to steep slopes below 3,000 feet in elevation. Several dominant species may occur within scrub communities, with some areas overwhelmingly dominated by one or two species. California sagebrush (*Artemisia tridentata*), California buckwheat (*Eriogonum fasciculatum*), California brittle bush (*Encelia californica*), purple sage (*Salvia leucophylla*), and deerweed (*Acmispon glaber*). Coastal sage scrub is found at the lower elevations within the SEA on drier south-facing slopes, but can also be found on the north-facing slopes and canyon of the Santa Susana Mountains.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Isocoma menziesii* (Menzie's golden bush scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum cinereum* (ashy buckwheat scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Ericameria linearifolia* (narrowleaf goldenbush scrub) Provisional Shrubland Alliance
- *Hazardia squarrosa* (sawtooth golden bush scrub) Shrubland Alliance
- *Lotus scoparius* ([*Acmispon glaber*] deer weed scrub) Shrubland Alliance
- *Lupinus albifrons* (silver bush lupine scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Alluvial Scrub: Consists of a mixture of shrubs that colonize sandy-gravelly flood deposited soils within intermittent creeks, arroyos, and drier terraces in large washes. This community intergrades with sage scrub communities and riparian communities and, therefore, occurs adjacent to these communities. Great basin sagebrush (*Artemisia tridentata*), scalebroom (*Lepidospartum squamatum*), quail bush (*Atriplex lentiformis*), and skunk bush (*Rhus aromatica*). Alluvial scrub is predominantly found at the northern end of the SEA in Salt Canyon.

Corresponding MCV communities:

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Lepidospartum squamatum* (scalebroom scrub) Shrubland Alliance
- *Malosma laurina* (laurel sumac scrub) Shrubland Alliance

Coast Live Oak Woodlands: Commonly occur along drainages that experience at least a seasonal flow or in other areas under mesic conditions. Soil structure and soil moisture are the most important limiting factors for the survival of oak woodlands; soils must be deep, uncompacted, fertile, well-aerated, and well-drained. This community is dominated by coast live oak. If sufficient groundwater is present, western sycamore (*Platanus racemosa*), which is usually associated with riparian habitats, may also occur in the oak woodland. Oak woodlands occupy areas within the canyons and drainages of the SEA.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Valley Oak Woodland: An open-canopy woodland found on deep, well-drained alluvial soils below 2,000 feet. This community is almost exclusively dominated by valley oak (*Quercus* lobata) with a grassy understory to form a savannah-like community. This community is located in small pockets in the eastern portion of the SEA.

Corresponding MCV communities:

- *Quercus lobata* (valley oak woodland) Woodland Alliance

Mainland Cherry Forest: Not well described, but is typically composed of tall stands of holly leaf cherry (*Prunus ilicifolia*) on rocky, dry, north-facing slopes. Within the SEA, coast live oak is co-dominant within this community and can be found in canyons in the northern portion of the SEA. This community can also be found in association with alluvial scrub in the northwestern portion of the SEA as it approaches the Santa Clara River.

Corresponding MCV communities:

- *Prunus ilicifolia* (Holly leaf cherry chaparral) Shrubland Alliance

Grassland Communities: Consist of low, herbaceous vegetation that are dominated by grasses but generally also harbor native forbs and bulbs, as well as naturalized annual forbs. Topographic factors that contribute to grassland presence include gradual slopes or flat areas with deep, well-developed soils in areas below 3,000 above MSL. The species richness of grassland communities is dependent upon a number of land use factors, including intensity and duration of natural or anthropogenic disturbances, such as grazing. Heavily grazed grasslands have a lower species richness.

Native grassland is often associated with coastal sage scrub and is found in pockets in close proximity to coastal sage scrub and non-native grassland. This community consists of at least 10 percent relative cover of native herbaceous plants (grasses and forbs). The remaining vegetative

cover is made up of non-native grasses found in annual grassland and a variety of annual, showy flowers, such as golden stars (*Bloomeria crocea*) and blue-eyed grass (*Sisyrinchium bellum*). Small patches of native grassland can be found scattered throughout the SEA mostly in openings in coastal sage scrub and mixed with non-native grasslands.

Corresponding MCV communities:

- Leymus condensatus (giant wild rye grassland) Herbaceous Alliance
- *Nassella cernua* ([*Stipa cernua*] nodding needle grass grassland) Provisional Herbaceous Alliance
- *Nassella lepida* ([*Stipa lepida*] foothill needle grass grassland) Provisional Herbaceous Alliance
- *Nassella pulchra* ([*Stipa pulchra*] purple needle grass grassland) Herbaceous Alliance

Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender wild oat (*Avena barbata*), wild oat (*A. fatua*), ripgut brome (*Bromus diandrus*), and red brome (*B. madritensis* ssp. *rubens*).

Corresponding MCV communities:

- *Avena (barbata, fatua)* (Wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica (nigra) and other mustards* (Upland mustards) Semi-Natural Herbaceous Stands
- *Bromus (diandrus,hordeaceus)-Brachypodium distachyon* (Annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus (arabicus, barbatus)* ([*Bromus madritensis* ssp. *rubens*] Red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Centaurea (solstitialis, melitensis)* (Yellow star-thistle fields) Semi-Natural Herbaceous Stands
- *Lolium perenne* ([*Festuca perennis*] perennial rye grass fields) Semi-Natural Herbaceous Stands

<u>Southern Willow Scrub</u>: A riparian community occurring within and adjacent to watercourses. The vegetation within this community is adapted to seasonal flooding. Southern willow scrub is characterized by dense, broad leafed, winter-deciduous riparian thickets dominated by one or more willow species (*Salix* spp.) Most stands are too dense to allow understory development. The dominant species of this community within the SEA are arroyo willow (*Salix lasiolepis*), and red willow (*S. laevigata*), with less common associates such as mulefat (*Baccharis salicifolia*). This community occurs in segments along portions of the intermittent drainages within the SEA.

Corresponding MCV communities:

- *Salix exigua* (Sandbar willow thickets) Shrubland Alliance
- *Salix lasiolepis* (Arroyo willow thickets) Shrubland Alliance

Southern Cottonwood-Willow Riparian Forest: Consists of an open, broad-leaved, winter-deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*), black cottonwood (*P. trichocarpa*), and several willow species, including arroyo willow and red willow. This community occupies much of the Santa Clara River adjacent to the northern boundary of the SEA, and also occurs within the larger, intermittent and perennial drainages within the SEA.

Corresponding MCV communities:

- *Populus fremontii* (fremont cottonwood forest) Forest Alliance
- *Populus trichocarpa* (black cottonwood forest) Forest Alliance

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found onsite include non-native grasses and a high proportion of weedy species, including tocalote, telegraph weed, tree tobacco, doveweed, black mustard, and thistle species. Several disturbed areas occur scattered throughout the SEA and take the form of residential developments, highways, fire breaks, dirt access roads, trails, transmission poles, and other similarly disturbed areas.

Corresponding MCV communities:

No corresponding communities at this time

Wildlife

Wildlife within the SEA is generally diverse and abundant due to the large acreage of natural open space and the diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the SEA and adjoining areas constitutes a functional ecosystem for a variety of wildlife species; this applies to the SEA and the regional ecosystem.

The analysis of invertebrates in this study is difficult due to the lack of data, although limited studies have been conducted. The SEA is believed to support healthy populations of a diverse assortment of countless invertebrate species. Amphibian populations are generally restricted in semi-arid and arid habitats but may be particularly abundant where riparian areas occur. The SEA is likely to support a variety of amphibians in abundance within wetland areas along the major canyon bottoms and the moister oak woodland areas. Many essential reptilian habitat characteristics, such as open habitats that allow free movement and high visibility, and small mammal burrows for cover and escape from predators and extreme weather, are present within the SEA. These characteristics, as well as the variety of habitat types present, are likely to support a wide variety of reptilian species.

The scrubland, woodland, riparian, and grassland habitats in the SEA provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, the SEA encompasses many year-round water sources, abundant raptor foraging, perching, and nesting habitat. The combination of these resources, as well as the mosaic of many community types, provide for an unusually high diversity of bird species. Several of these species may use this SEA as their only consistent occurrence in the southeastern portion of the County.

Mammal populations within the SEA are diverse and reflective of the diversity of habitat types. Unlike many other inland hills within the Los Angeles Basin, this SEA is large enough to support relatively stable and large mammal populations despite the urban surroundings; even the large

carnivores, including the black bear and mountain lion, are known from the SEA. This indicates the presence of intact food chains and complete communities that have a complex, resilient food web.

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEAs*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The SEA includes several important linkages for wildlife movement. The Simi Hills and Santa Susana Mountains provide a vast open space corridor to foster wildlife movement between the Santa Monica Mountains to the south, San Gabriel Mountains to the east, and Los Padres National Forest to the north in the western San Gabriel Mountains of the Transverse Ranges. Dense, natural habitat associated with the majority of the SEA provides excellent opportunities for concealment and water sources, while the grasslands provide an abundance of prey. Examples of wildlife that use these linkages include mountain lion (*Puma concolor*), mule deer (*Odocoileus hemionus*), coyote (*Canis latrans*), bobcat (*Lynx rufus*), and a number of medium-sized animals.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. Critical habitats for the Braunton's milkvetch and coastal California gnatcatcher are described in the General Boundary and Resources Description section.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include chamise-white sage chaparral, holly leaf cherry chaparral, California brittle bush scrub, white sage scrub, narrowleaf goldenbush scrub, sawtooth golden bush scrub, scalebroom scrub, valley oak woodland, holly leaf cherry chaparral, giant wild rye grassland, nodding needle grass grassland, foothill needle grass grassland, purple needle grass grassland, Fremont cottonwood forest, and black cottonwood forest, which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Norris' beard moss (*Didymodon norrisii*) RPR 2.2
- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) RPR 2.2
- Braunton's milk-vetch (*Astragalus brauntonii*) FE, RPR 1B.1
- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Peirson's morning-glory (*Calystegia peirsonii*) RPR 4.2
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) FC, SE, RPR 1B.1
- Santa Susana tarplant (*Deinandra minthornii*) Rare, RPR 1B.2
- San Gabriel bedstraw (*Galium grande*) RPR 1B.2
- Palmer's grapplinghook (*Harpagonella palmeri*) RPR 4.2
- Newhall sunflower (*Helianthus inexpectatus*) RPR 1B.1
- Los Angeles sunflower (*Helianthus nuttallii* ssp. *parishii*) RPR 1A
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- Davidson's bushmallow (*Malacothamnus davidsonii*) RPR 1B.2
- Mud nama (*Nama stenocarpum*) RPR 2.2
- Moran's navarretia (*Navarretia fossalis*) FT, RPR 1B.1
- Ojai navarretia (*Navarretia ojaiensis*) RPR 1B.1
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2

- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Late-flowered mariposa lily (*Calochortus fimbriatus*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Chaparral nolina (*Nolina cismontana*) RPR 1B.2
- California Orcutt grass (*Orcuttia californica*) FE, SE, RPR 1B.1

Sensitive Animal Species

The following vertebrate species are state and/or federally-listed as endangered or threatened, and have the potential to occur in the SEA:

- Riverside fairy shrimp (*Streptocephalus woottoni*) FE
- Unarmored threespine stickleback (*Gasterosteus aculeatus williamsoni*) FE, FSS, SE, CDFG Fully Protected
- Arroyo toad (*Anaxyrus californicus*) FE, SSC
- California red-legged frog (*Rana draytonii*) FT, SSC
- Sierra Madre yellow-legged frog (*Rana muscosa*) FE, FSS, SSC
- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- San Bernardino ringneck snake (*Diadophis punctatus modestus*) FSS
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- San Diego mountain kingsnake (*Lampropeltis zonata pulchra*) FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Coast patch-nosed snake (*Salvadora hexalepis virgultea*) SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Cooper's hawk (nesting) (*Accipiter cooperii*) CDFG Watch List

- Tricolored blackbird (nesting colony) (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Grasshopper sparrow (*Ammodramus savannarum*) CDFG Special Animals List
- Bell's sage sparrow (*Amphispiza belli belli*) BCC, CDFG Watch List
- Golden eagle (nesting and wintering) (*Aquila chrysaetos*) BCC, BLMS, CDFG Watch List, CDFG Fully Protected, CDF
- Burrowing owl (burrow sites) (*Athene cunicularia*) BCC, BLMS, SSC
- Western yellow-billed cuckoo (*nesting*) (*Coccyzus americanus occidentalis*) FC, BCC, FSS, SE
- Yellow warbler (nesting) (*Dendroica petechia brewsteri*) SSC
- White-tailed kite (nesting) (*Elanus leucurus*) CDFG Fully Protected
- California horned lark (*Eremophila alpestris actia*) CDFG Watch List, LAA (full species, coastal slope)
- California condor (*Gymnogyps californianus*) FE, SE, CDF, CDFG Fully Protected, USBC, AWL, ABC
- Yellow-breasted chat (nesting) (*Icteria virens*) SSC
- Loggerhead shrike (nesting) (*Lanius ludovicianus*) BCC, SSC, LAA (coastal slope wintering)
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Bank swallow (nesting) (*Riparia riparia*) ST
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- Western red bat (*Lasiurus blossevilli*) FSS, WBWG High
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- California leaf-nosed bat (*Macrotus californicus*) FSS, SSC, WBWG High

- South coast marsh vole (*Microtus californicus stephensi*) SSC
- Western small-footed myotis (*Myotis ciliolabrum*) BLMS, WBWG Medium
- Yuma myotis (*Myotis yumaensis*) BLMS, WBWG Low–Medium
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Southern grasshopper mouse (*Onychomys torridus ramona*) SSC
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) FSS, SSC
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met described below .

CRITERIA ANALYSIS OF THE SANTA SUSANA MOUNTAINS AND SIMI HILLS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	Most of the SEA has critical habitat for the coastal California gnatcatcher. A population of the Braunton's milkvetch has critical habitat in the Simi Hills part of the SEA. The SEA has robust populations of rare plants, such as the Plummer's mariposa lily and the Santa Susana tarweed.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The SEA contains habitat of the extremely rare Santa Susana tarplant. In addition, several plant communities within the SEA are CDFG highest inventory priority communities due to their restricted distribution in the Southern California region. These communities include: coastal sage scrub, alluvial scrub, valley oak woodland, valley oak savannah, mainland cherry woodland, native grassland, southern willow scrub, and cottonwood-willow riparian forest.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	All of the plant communities and habitats mentioned above as being restricted in distribution on a regional basis are further restricted in distribution within the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The open space of the SEA allows for connectivity between the Santa Monica Mountains and the San Gabriel Mountains (both the eastern and western sections). Due to the development within the San Fernando Valley and the valley of the Santa Clara River, this is an important corridor for gene flow and species movement.

Criterion		Status	Justification
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The SEA contains several populations that are unusual or at the extreme ends of their distributions: Douglas-fir, both big cone and the Douglas-fir common to the north, and coastal California gnatcatcher at its western extent. Several unusual vegetation alliances are in the Mountains, for example groves of walnuts and flowering ash. Flowering ash are uncommonly tall. The Santa Susana Mountains contain some representatives of the desert Palmer's oak, which is unusual in the County.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The relatively undisturbed nature and large size of the plant communities within the Santa Susana Mountains and Simi Hills provides many undisturbed examples of native, natural communities within the County.

In conclusion, the area is an SEA because it contains: A) core habitats of listed species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are restricted in distribution in the County and regionally; D) a very essential migration corridor, which is limited in availability in the County; E) unusual populations at the extreme ends of their distributions that are of scientific interest; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Tujunga Valley and Hansen Dam SEA

Location

General

The Tujunga Valley and Hansen Dam Significant Ecological Area (SEA) is located on the northern edge of the San Fernando Valley. The SEA consists of the Tujunga Valley and Wash, starting in the riparian areas of the Big Tujunga, which is the main tributary of the Los Angeles River, within the Angeles National Forest and stretching to include Hansen Dam, Hansen Dam Flood Control Basin, Hansen Dam Park, Hansen Dam Golf Course, Tujunga Wash, and industrial areas downstream of the Hansen Dam. The SEA is entirely in the City of Los Angeles. Most of the part of the SEA upstream, including the Hansen Dam, is a California Audubon-designated State Important Bird Area (IBA), which is part of the Los Angeles Flood Control Basin IBA. The Big Tujunga area is recognized for its great importance to migrating birds on the Pacific Flyway as well as the very rare habitat of alluvial fan scrub, which has uncommon resident birds. The Tujunga Wash above Hansen Dam and into the Angeles National Forest beyond the SEA is designated critical habitat for the federally-threatened Santa Ana sucker (*Catastomus santaanae*). Two other fishes of the original native four for the Los Angeles River also occur in the Wash and upstream in the Big Tujunga: arroyo chub (*Gila orcuttii*) and an unnamed subspecies of the speckled dace group (*Rhinichthys osculus* ssp. 3).

The SEA is located within portions of the United States Geological Survey (USGS) 7.5' California Quadrangles: San Fernando, Sunland and Van Nuys.

General Boundary and Resources Description

The SEA boundary encompasses the Tujunga Valley Wash and the Hansen Dam Recreation area. The SEA begins in the Angeles National Forest downstream of the confluence of Pipe Canyon with the Big Tujunga, and generally includes the Wash area for much of its extent. The Wash most of the time has water, and from downstream at Hansen Lake (in the Hansen Dam Park) to beyond the upstream area of the SEA, is critical habitat for the federally-threatened Santa Ana sucker (*Catostomus santaanae*). This critical habitat extends beyond the SEA and beyond the Big Tujunga Dam to near the headwaters in both Mill Creek and the Upper Big Tujunga Canyon. The state fish species of concern, speckled dace (*Rhinichthys osculus* ssp. 3) and arroyo chub (*Gila orcuttii*) also occur here. A finger extends off the Wash, up a ridge with native chaparral habitat towards Mount Lukens. The boundary travels east to west, and the Wash receives multiple tributaries from the north and south as it flows west. The northeastern end of the Los Angeles Flood Basins IBA begins at about the crossing of Oro Vista Avenue over the Big Tujunga Wash. The clubhouse part of the Angeles National Golf Club next to Foothill Boulevard is excluded from the SEA, but most of the golf course, which has the natural braids of the wash running among its greens, is included in the SEA. East and adjacent to the golf course is a state reserve area for the state and federally-endangered slender-horned spineflower (*Dodecahema leptoceras*). This diminutive wash plant is known locally from Santa Clarita to the east end of the San Bernardino Mountains, and south to the Santa Ana Mountains. It is endangered due to all kinds of development that alters wash flood plains. The golf course area once had and may still have some plants.

The Wash, golf course, and the reserve area have an unusual remnant vegetation of alluvial fan scrub, with California junipers (*Juniperus californica*), cactus patches of prickly-pear (*Opuntia littoralis*) and cholla (*O. parryi*), in conjunction with the usual riparian and scrub plants. The very sensitive coastal cactus wren (*Campylorhynchus brunneicapillus sandiegensis*) is in residence in this area. The natural area of riparian vegetation is on the banks of the Wash, golf course, and reserve next to the Wash, as well as with a remnant native forest in the stream course of Haines Canyon Creek, which joins the Wash at the golf course. This kind of habitat, which once covered the bajada of coalescing coastal alluvial fans next to the mountains of the County has been nearly extirpated by development and flood control. It is only represented in a few places in the County. The San Gabriel Canyon SEA has another example at the Santa Fe Dam Recreation Area. Migratory waterfowl often use the ponds of the golf course that are filled by Haines Canyon Creek and the Big Tujunga. The alluvial fan habitat mixed with riparian forest continues across the Interstate-210 as the Big Tujunga Wash approaches and flows into Hansen Dam Park.

The SEA has a broad undercrossing of the Interstate-210, which includes a braid of its tributary Haines Canyon Creek crossing under Foothill Boulevard next to Wentworth Street. The Wentworth Street undercrossing is important to wildlife, as it connects to somewhat dispersed horse ranchettes in the Shadow Hills and from there to the natural areas of the Verdugo Mountains and the Verdugo Mountains SEA. Mountain lions may live in the Verdugo Mountains, which would be an important connection for that population as well as for other animals and plants of the Verdugo Mountains.

The Hansen Dam Park is a meeting area for migratory birds with its perennial water and riparian forest that includes some giant sycamores (*Platanus racemosa*) and cottonwoods (*Populus fremontii*). It is a favorite of bird watchers, and the species list has about 260 species. Unusual species have been observed here, such as the federally-endangered coastal California gnatcatcher (*Polioptila californica californica*). Downstream of the Dam, the Hansen Dam Golf Course is included in the SEA, since the pools and mix of native riparian vegetation along with the ornamental vegetation attracts wildlife. The downstream side of the earthen Hansen Dam has been planted with coastal sage scrub, and may be attractive to the gnatcatcher. The quarry and recharge areas have many spots of willow scrub and occasional other native vegetation. The quarry and the recharge

pool areas are included in the SEA up to the undercrossing of San Fernando Boulevard.

The area southwest of the Dam is used as a spreading ground. This has created several freshwater marsh areas that are used by marsh birds, migratory waterfowl, and shore birds. The area is also valuable as a wildlife corridor. The vegetation in the Tujunga Valley runs nearly uninterrupted from the foot of the Verdugo Mountains well up into the San Gabriel Mountains. The area has been recognized for its importance, and is used by the Audubon Society and local universities and colleges as a sample of a rapidly disappearing habitat type. As a result, the resources of the area are well known.

Vegetation

The SEA possesses several important features. The floodplain behind Hansen Dam supports one of the last examples of open coastal sage scrub vegetation that was once found in the numerous arroyos of the Los Angeles Basin. Portions of the river bottom have surface moisture, and support small pockets of fresh water marsh, which is another limited resource in the County. The remainder of the arroyo and surrounding hillsides are dry, and support several species of plants that are otherwise found only on the desert slopes of the San Gabriel Mountains. Populations of Nevin's barberry (*Berberis nevinii*) and slender-horned spineflower have been found in the Tujunga Valley Wash. Both species are extremely limited in distribution and have been placed on the federal endangered species list.

Vegetation within the SEA is comprised of a variety of community types. The diversity of the communities reflects the topography of the area. All plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive plant species and plant communities occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

Chaparral: A shrub community composed of robust species. Within this SEA, a number of chaparral sub-communities are found, which are differentiated by their dominant plant species. These include chamise (*Adenostoma fasciculatum*), buck brush (*Ceanothus* spp.), scrub oak (*Quercus berberidifolia*), interior live oak (*Quercus wislizenii*) and mosaics of these depending on mixes of species and elevation. These and other shrub species form dense vegetation covers growing 5 to 10 feet in height. The development of chaparral is pronounced over large hillside areas throughout the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Ceanothus greggii* [*vestitus*] (cup leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance
- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance

- *Rhus ovata* (sugarbush chaparral) Shrubland Alliance

Coastal Sage Scrub: Consists of drought-deciduous, low, soft-leafed shrubs and herbs on gentle to steep slopes under 1,500 feet in elevation. This community is dominated by California sagebrush, California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and California brittle bush (*Encelia californica*). Coastal sage scrub is distributed throughout the SEA along dry ridgelines, slopes, and other areas previously disturbed by fire.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Diplacus* [*Mimulus*] *aurantiacus* (bush monkeyflower scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance

Non-Native Grassland: Consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include wild oat (*Avena fatua*), slender oat, red brome, ripgut brome (*Bromus diandrus*), and herbs such as black mustard and wild radish. Non-native grasslands are located in small to large patches throughout the SEA in previously disturbed areas, cattle pastures, valley bottoms, and along road sides.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) Semi-Natural Herbaceous Stands

- *Lolium perenne* ([*Festuca perennis*] perennial rye grass fields) Semi-Natural Herbaceous Stands

Coast Live Oak Woodland: Dominated by coast live oak (*Quercus agrifolia* var. *agrifolia*) with a poorly developed shrub layer, which may include toyon (*Heteromeles arbutifolia*), golden currant (*Ribes aureum*), laurel sumac (*Malosma laurina*), western blue elderberry (*Sambucus nigra* var. *caerulea*), and mulefat (*Baccharis salicifolia*). Some coast live oak woodlands in the area include scattered Southern California black walnut (*Juglans californica*) or valley oak (*Quercus lobata*). This community occurs throughout the SEA and generally along canyon bottoms and more mesic north-facing slopes.

Corresponding MCV communities:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Cottonwood-Willow Riparian Forest: An open broad-leafed winter-deciduous riparian forest dominated by Fremont cottonwood (*Populus fremontii*), arroyo willow (*Salix lasiolepis*), and red willow (*Salix laevigata*). This community occurs in segments along of many of the drainages, ponds, and lakes throughout the SEA.

Corresponding MCV communities:

- *Populus fremontii* (Fremont cottonwood woodlands) Forest Alliance
- *Salix lasiolepis* (arroyo willow thickets) Woodland Alliance
- *Salix laevigata* (red willow thickets) Woodland Alliance

Freshwater Marsh: Small areas supporting freshwater marsh are found at scattered locations. Freshwater marsh requires perennially shallow water or saturated soils. Dominant plants are emergent species including cattails and bulrushes.

Corresponding MCV communities:

- *Phragmites australis* (common reed marshes) Herbaceous Alliance and Semi-Natural Stands
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha* (*angustifolia*, *domingenis*, *latifolia*) (cattail marshes) Herbaceous Alliance
- *Lemna* (*minor*) and relatives Provisional (duckweed blooms) Herbaceous Alliance

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA include non-native grasses and a high proportion of weedy species, including black mustard and thistle species. Several disturbed areas are scattered throughout the SEA and take the form of residential developments, paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Corresponding MCV communities:

No corresponding communities at this time

Wildlife

Wildlife within the SEA is generally diverse and abundant due to large acreages of natural open space and diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the SEA and adjoining areas constitutes a functional ecosystem for a variety of wildlife species, both within the SEA and as part of the regional ecosystem.

The analysis of invertebrates in this study is severely limited due to the lack of data; the SEA, however, undoubtedly supports healthy populations of a diverse assortment of invertebrate species. The native fish populations have been augmented with many additions of non-native fishes from other places, particularly those that are often fished. Amphibian populations are plentiful in the SEA due to the high moisture content provided by freshwater marshes present, as well as the large number of drainages and flood control basin.

The SEA is also likely to support a variety of amphibians within the moister woodland areas and canyon bottoms. Common amphibians to the area are salamanders, Baja California chorus frog (*Pseudacris hypochondriaca*), and California toad (*Anaxyrus halophilus*). Many essential reptilian habitat characteristics are present within the SEA. These include rock outcroppings that allow for high visibility and small mammal burrows for cover and escape from predators and extreme weather. These characteristics, as well as the variety of habitat types present, are likely to support a wide variety of reptilian species. Common reptiles to the area are lizards and snakes. The area southwest of the Dam is used as a spreading ground. This has created several fresh water marsh areas that are used by marsh birds, migratory waterfowl, and shore birds. The many year-round water sources located throughout the SEA provide for abundant raptor foraging, perching, and nesting habitat along the slopes of the San Gabriel and Verdugo Mountain Ranges.

The scrubland, woodland, riparian, and grassland habitats in the SEA provide foraging and cover habitat for year-round residents and seasonal residents. Within the Hansen Dam Recreation Area, the mammals that are expected to be found are typical of those that would “occur regularly in disturbed areas and the urban edge.” These include California ground squirrel (*Spermophilus beecheyi*), Botta’s pocket gopher (*Thomomys bottae*), Virginia opossum (*Didelphis virginiana*), desert cottontail (*Sylvilagus audubonii*), striped and spotted skunks (*Mephitis mephitis and Spilogale gracilis*), raccoon (*Procyon lotor*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), etc. The combination of these resources, as well as the confluence of many community types provides a high diversity of animal species.

Wildlife Movement

Although wildlife movement is hampered by development surrounding the SEA to the south, animals are still able to move through the adjacent hills and valleys, and through the Verdugo Mountains, well up into the San Gabriel Mountains. Due to its large size and topographic complexity, many linkages are certain to occur within the SEA at various bottlenecks. These linkages allow movement between large open space areas within the SEA. Although there are significantly large open spaces within the SEA, contiguous habitat linkages between them are critical in reducing bottlenecks and providing for long-term sustainability. A wide variety of wildlife use linkages throughout the SEA, including mountain lion (*Puma concolor*), coyote, mule deer, bobcat (*Lynx rufus*), and a number of medium-sized mammals. The Wentworth Street underpass of Interstate-210 is a conduit for wildlife through the dispersed residential neighborhoods of the Shadow Hills. The Shadow Hills are the westernmost extent of the Verdugo Mountains, which provide a large area of natural habitat for

wildlife.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. Most of the stream course of this SEA is critical habitat for the federally-threatened Santa Ana sucker, and also provides habitat for two co-occurring native fish of state concern, the speckled dace and the arroyo chub.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The array and composition of these communities has been discussed earlier in this section (see Section 2, Vegetation, above). These communities include chamise-white sage chaparral, holly leaf cherry chaparral, California brittle bush scrub, bush monkeyflower scrub, white sage scrub, and Fremont cottonwood woodlands, which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Braunton's milk-vetch (*Astragalus brauntonii*) FE, RPR 1B.1
- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Lewis' evening-primrose (*Camissonia lewisii*) RPR 3

- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) FC, SE, RPR 1B.1
- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) RPR 1B.1
- Slender-horned spineflower (*Dodecahema leptoceras*) FE, SE, RPR 1B.1
- Mesa horkelia (*Horkelia cuneata* ssp. *puberula*) RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- Davidson's bushmallow (*Malacothamnus davidsonii*) RPR 1B.2
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- California satintail (*Imperata brevifolia*) RPR 2.1

Sensitive Animal Species

The following special-status animal species are reported or have the potential to occur within the SEA, based on known habitat requirements and known range attributes:

- California red-legged frog (*Rana draytonii*) FT, SSC
- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Coast Range newt (*Taricha torosa*) SSC
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Cooper's hawk (*Accipiter cooperii*) CDFG Watch List
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Bell's sage sparrow (*Amphispiza belli belli*) BCC, CDFG Watch List

- Western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) FC, BCC, FSS, SE
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- California horned lark (*Eremophila alpestris actia*) CDFG Watch List, LAA
- Prairie falcon (*Falco mexicanus*) BCC, CDFG Watch List, LAA
- American peregrine falcon (*Falco peregrinus anatum*) BCC, FSS, SE, CDF, CDFG Fully Protected, AWL, ABC
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Western yellow bat (*Lasiurus xanthinus*) WBWG High
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- California leaf-nosed bat (*Macrotus californicus*) FSS, SSC, WBWG High
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC
- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- Southern grasshopper mouse (*Onychomys torridus ramona*) SSC
- Los Angeles pocket mouse (*Perognathus longimembris brevinasus*) FSS, SSC
- American badger (*Taxidea taxus*) SSC
- Santa Ana sucker (*Catostomus santaanae*) FT, SSC
- Arroyo chub (*Gila orcuttii*) SSC
- Santa Ana speckled dace (*Rhinichthys osculus* ssp. 3) SSC

Regional Biological Value

The SEA meets all SEA designation criteria and supports many regional biological values. Each

criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE TUJUNGA VALLEY AND HANSEN DAM SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The Tujunga Valley Wash supports populations of the federally-endangered plants Nevin's barberry and slender-horned spineflower. Most of the SEA is critical habitat for the federally-threatened Santa Ana sucker. Two other sensitive native fishes, speckled dace and arroyo chub, co-occur with the sucker. Coastal California gnatcatcher may be a resident of the area. The coastal cactus wren nests in the alluvial fan vegetation of the SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The stream is naturally perennial, but largely controlled by the upstream Big Tujunga Dam. Similar wash and floodplain habitat of these plants and fishes is under considerable pressure from development and from flood-control hard channelization throughout Southern California. The rarity of the vegetation extends to other biota that use these areas, and these plants are indicators for a widespread loss of this kind of habitat. Several birds considered species of special concern occur in the SEA. They typically occupy alluvial scrub areas ,such as the outwash fans formerly found where mountain canyons exit onto the plain of the Los Angeles Basin, and are in this habitat in the SEA.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	The wash and floodplain habitat of these plants, fishes, and birds is under considerable pressure from development and for flood-control hard channelization throughout Los Angeles and is much diminished from the continuous habitat it once was.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	This SEA is located on one of the main tributaries of the Los Angeles River, Tujunga Canyon and connects with the Hansen Dam flood and recharge area. In spite of the channelization of the Los Angeles River, this area is still an important connecting and migration area for plants and wildlife between the San Gabriel Mountains, the Verdugo Mountains, and the San Fernando Valley. It is an important rest area for aerial fauna traveling between the Santa Monica Mountains and the San Gabriel Mountains.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The scarcity of natural alluvial wash and fan habitats in Los Angeles ensures that the remaining ones are good areas for scientific study of birds and other organisms that were once more common in the Los Angeles area.
F)	Areas that would provide for the	Met	The Tujunga Valley Wash is a relatively undisturbed

	preservation of relatively undisturbed examples of the original natural biotic communities in the County.		example of the alluvial washes and fans that once lined the mountains of Los Angeles. It is near a fresh water marsh area used as a spreading ground that is southwest of the dam. A fresh water marsh near the stream exit from the mountains would have been typical of the former configuration with faults along the mountain base, creating uneven ground that would contain marsh pockets. Now most of this type of area has been developed for residences, and most of the washes have been altered as flood control projects. The Wash, therefore, is important to preserve.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C), biotic communities, vegetative associations, and habitat of plant or animal species that are restricted in distribution on a regional basis and limited in availability in the County; D) habitat for breeding, feeding, resting, and migrating that is limited both in the County and regionally; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Valley Oaks Savannah SEA

Location

General

The Valley Oaks Savannah Significant Ecological Area (SEA) is located north of the Santa Susana Mountains, approximately one mile south of the Santa Clara River and one mile north of Pico Canyon. The SEA is bordered on the east by Interstate-5 and is situated between Valencia Boulevard and Stevenson Ranch Parkway. To the west, the SEA is bordered by the foothills of the Santa Susana Mountains. The habitat within the SEA was once the emblem of Spanish California, with rolling hills, grasslands and spaced giant valley oaks. This was a chief habitat in the San Fernando Valley when it was filled with wildlife, such as herds of pronghorn. Under the influence of European settlers, these areas were at first cattle range, and then gradually developed into residential neighborhoods.

The SEA is located in the Newhall United States Geological Survey (USGS) 7.5' California Quadrangle.

General Boundary and Resources Description

The SEA is bordered to the east by Interstate-5 and is situated between Valencia Boulevard on the north and Stevenson Ranch Parkway on the south of the SEA. To the west, the SEA is bordered by the West Ridge residential area of Valencia to the north, and the foothills of the Santa Susana Mountains to the south. The SEA boundary outlines an irregular area of undisturbed grassland savannah with hundreds of valley oaks (*Quercus lobata*). In the north, the SEA includes a small part of the TPC of Valencia (a private golf club) that has retained a number of its valley oaks on the ridges between sections of the golf course. The topography is rolling ridges that trend northeast-southwest along the edge of development. The West Ridge development is on graded areas of those rolling ridges.

The SEA is almost completely undisturbed, except for a few dirt roads. This area contains one of the last remaining stands of valley oak (*Quercus lobata*) in the Santa Clarita Valley. The site consists of specimen trees scattered over the SEA. The adjoining natural hills to the southwest of the SEA have a mixture of plants from the coastal sage chaparral scrub and chaparral communities, which are typical of those found in the Santa Clarita Valley. Other vegetation on the SEA in the southwest area includes coastal sage chaparral scrub and non-native grasses.

The majority of the SEA consists of undisturbed open space bordered by a few high density residential developments. Open space that adjoins the SEA to the southwest is mostly vegetated with dense stands of chaparral. Other types of vegetation, such as woodlands and grasslands, occur in smaller portions that are scattered throughout the adjacent land on moist or north-facing slopes and canyon bottoms. Lesser amounts of coastal sage chaparral scrub are also present, chiefly as an early successional community in areas that have been previously disturbed.

Vegetation

All plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. More recent survey findings have also been reviewed here in order to reflect the current status of the area. Findings from the Santa Clarita Valley Area Plan, Los Angeles Department of Regional Planning, 2010 have been reviewed and included. Sensitive plant species and plant communities occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

Valley Oak Savannah: An open-canopy woodland found on deep, well-drained alluvial soils below 2,000 feet. This community is almost exclusively dominated by valley oak with scattered coast live oaks (*Quercus agrifolia* var. *agrifolia*) in some areas and a grassy understory of California buckwheat, forming a savannah-like community throughout much of the SEA.

Corresponding MCV communities:

- *Quercus lobata* (valley oak woodland) Woodland Alliance

Coastal Sage Chaparral Scrub Communities: Consist of drought-deciduous, low, soft-leaved shrubs and herbs on gentle to steep slopes under 3,000 feet in elevation. Several dominant species may occur within scrub communities, with some areas overwhelmingly dominated by one or two species. Dominant species include California sagebrush, California buckwheat, California brittle bush (*Encelia californica*), purple sage (*Salvia leucophylla*), bush mallow (*Malacothamnus fasciculatus*), Menxie's goldenbush (*Isocoma menziesii*), and deer weed (*Acmispon glaber*).

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Dendromecon rigida* (bush poppy scrub) Shrubland Alliance
- *Isocoma menziesii* (Menzie's golden bush scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Ericameria linearifolia* (narrowleaf goldenbush scrub) Provisional Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Grassland Communities: Consist of low, herbaceous vegetation dominated by grasses, but generally also harbor native forbs and bulbs, as well as naturalized annual forbs. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include wild oat, slender wild oat, foxtail chess, ripgut brome, along with scattered coastal sage chaparral scrub species. Non-native grasslands occur along the western portion of the north boundary of the SEA.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and Other Mustards Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*,*hordeaceus*)-*Brachypodium distachyon* Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) [*Bromus madritensis* ssp. *rubens*] Semi-Natural Herbaceous Stands
- *Lolium perenne* [*Festuca perennis*] (perennial rye grass fields) Semi-Natural Herbaceous Stands

Disturbed or Barren Areas: Areas that either completely lack vegetation or are dominated by ruderal species. Ruderal vegetation typically found within the SEA include non-native grasses and a high proportion of weedy species, including black mustard and thistle species. The primary disturbed areas within the SEA are dirt roadways.

Corresponding MCV communities:

None at this time.

Wildlife

Wildlife populations within the SEA are limited in diversity due to the area's physiographic size and its nearly complete surrounding by development. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the SEA and adjoining areas constitutes a functional ecosystem for a variety of wildlife species, both within the SEA and as part of the regional ecosystem.

The analysis of invertebrates is severely limited due to the lack of specific data; however, the SEA is likely to support small healthy populations of invertebrate species based on its undisturbed nature and type of habitat. Acorns within the Valley Oak Savannah provide a valuable food source for a variety of wildlife. Also, the mature trees are an important source of nesting and roosting habitat for birds and other arboreal vertebrates. The scrubland, woodland, and grassland habitats in and adjacent to the SEA provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, the SEA contains abundant raptor foraging, perching, and nesting habitat. Mammal populations within the SEA respond favorably to these habitats. Although mammal populations within the SEA are expected to be limited due to the size of the SEA, they are still likely to utilize the area based on the habitats present. Amphibians may not be abundant due to the lack of water in the SEA; however, shaded areas within the woodland may be moist enough to allow for a few species to occupy the site. Reptilian diversity within the SEA is highest within patches of coastal sage chaparral scrub and may be abundant due the presence of alluvial wash habitat on adjacent property.

Wildlife Movement

Wildlife movement within the SEA is limited to local movement of foraging animals. Although the SEA does not support regional corridors itself, adjacent lands to the west and northwest may be important linkages for wildlife movement to and from the Santa Susana Mountains and the Santa Clara River. The location of the SEA, therefore, may be important as a corridor buffer and/or adjacent foraging grounds.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

Sensitive Plan Communities and Habitats

The SEA supports four plant community types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include valley oak woodland, California brittle bush scrub, white sage scrub, and narrowleaf goldenbush

scrub. The valley oak woodland occupies the majority of the SEA, and the remaining alliances occur in the southwestern part of the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Peirson's morning-glory (*Calystegia peirsonii*) RPR 4.2
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) RPR 1B.1, SE, federal candidate (FC)
- Short-joint beavertail (*Opuntia basilaris* var. *brachyclada*) RPR 1B.2
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2

Sensitive Animal Species

The following special-status animal species are reported or have the potential to occur within the SEA, based on known habitat requirements and known range attributes:

- Western spadefoot (*Spea hammondii*) BLMS, SSC
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Cooper’s hawk (*Accipiter cooperii*) CDFG Watch List
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List

- Grasshopper sparrow (*Ammodramus savannarum*) CDFG Special Animals List
- Bell's sage sparrow (*Amphispiza belli belli*) BCC, CDFG Watch List
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- White-tailed kite (*Elanus leucurus*) CDFG Fully Protected
- California horned lark (*Eremophila alpestris actia*) CDFG Watch List, LAA
- Loggerhead shrike (*Lanius ludovicianus*) BCC, SSC, LAA
- Coastal California gnatcatcher (*Polioptila californica californica*) FT, SSC, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Spotted bat (*Euderma maculatum*) BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- San Diego black-tailed jackrabbit (*Lepus californicus bennettii*) SSC
- California leaf-nosed bat (*Macrotus californicus*) FSS, SSC, WBWG High
- San Diego desert woodrat (*Neotoma lepida intermedia*) SSC

Regional Biological Value

The SEA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE VALLEY OAKS SAVANNAH SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The County considers oaks as indicators of the presence of important biological communities for preservation, and the uncommon valley oaks of the western areas of the County are especially valued.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The County has the southern boundary of occurrence for the valley oak, which has its core population in the California Central Valley. This makes the valley oak areas important for Southern California—they are very uncommon for the region as a whole.
	Within the County, biotic	Met	The valley oak is uncommon in the County, and the western areas

	Criterion	Status	Justification
C)	communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.		with this species are scattered.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	Oaks are the basic structure for complex communities of organisms. They form shelter and provide many ecosystem functions that facilitate breeding, feeding, resting, and migration. As the basis of the community, it is important to conserve this habitat.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The valley oaks of the County are on the southern edge of the species' range. This makes them important as the extreme in physical and geographical limits for the scientific study of the species.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Although the SEA area is small, this savannah is natural and representative of a natural biotic community that has chiefly been lost in the County.

In conclusion, the area is an SEA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) a natural savannah of valley oaks, once a common habitat on the west side of the County.

Verdugo Mountains SEA

Location

General

The Verdugo Mountains Significant Ecological Area (SEA) is located within the Verdugo Mountains. This SEA encompasses the Verdugo Mountains south of Interstate-210 and east of the Interstate-5, as well as a portion of these mountains north of Interstate-210.

The Verdugo Mountains are a wilderness island in the middle of the urbanized metropolitan area of the

County, surrounded by the cities of Los Angeles, Burbank and Glendale. This area is cherished by the local communities, much of which are designated agricultural with many equestrian properties. The Verdugo Mountains have retained a rural atmosphere despite their proximity to urban Los Angeles. The Verdugo Mountains currently encompass wilderness area, which ranges through various chaparral, coastal sage chaparral scrub, southern willow scrub, coast live oak woodland and forest ecosystems, and many riparian areas with seasonal waterfalls. It is one of the few remaining natural regions in the Los Angeles area that supports abundant native wildlife and habitats, and also contains several rare and sensitive plant and animal species. The geographic location of the Verdugo Mountains makes them important for scientific study, genetic interchange between otherwise isolated populations, and recreation for urban residents.

The SEA is located at least partially in each of the following United States Geological Survey (USGS) 7.5' California Quadrangles: Burbank, Sunland, and Pasadena.

General Boundary and Resources Description

The SEA is an island refuge, providing what remains of a link between plant and animal populations found in the Santa Monica and San Gabriel mountains. Genetic interchange, by way of this linkage is important in perpetuating the genetic variability in isolated populations, and the maintenance of healthy ecosystems. Chaparral and coastal sage chaparral scrub cover the hillsides of the mountains, with lush riparian vegetation, including California bay (*Umbellularia californica*), western sycamore (*Platanus racemosa*), coast live oak (*Quercus agrifolia* var. *agrifolia*), ferns, and ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*), which are found in most of the stream drainages. These plant communities provide habitat that is essential to the diverse and abundant fauna that are found in the area. The mountains are also home to the northernmost population of mission manzanita (*Xylococcus bicolor*).

The proximity of the mountains to urban areas provides an excellent opportunity to study the interaction between wild animal populations and humans. The area has already been used for studies concerned with public health. The Interstate-210 crosses the northern edge and there is some intrusion of development along La Tuna Canyon Road. Residential development is beginning to trim the area and has been excluded from the SEA. However, present human use of the natural, native area has been low and has not significantly affected the natural resources found in the Verdugo Mountains.

The northernmost point of the SEA is in the Shadow Hills district of the City of Los Angeles at the west side of the undercrossing of Sunland/Foothill Boulevard beneath the Interstate-210. The freeway frontage is native vegetation and connective to the north with the Wentworth Street undercrossing of Interstate-210. The connection is through native vegetation along the freeway frontage and among dispersed equestrian ranchettes in the Shadow Hills. Wentworth Street ends a short distance east of Interstate-210 at the Angeles National Golf Club, which has its greens interspersed among braided stream courses of the Big Tujunga Canyon alluvial fan. The golf course is part of the SEA. The native vegetation along the freeway, at the restored County Public Works area on the north side of Wentworth, and the native vegetation among the residences of Shadow Hills is all considered an important conduit for wildlife traversing among the San Gabriel Mountains, the SEA, and the Verdugo Mountains.

The SEA boundary follows southward along the southwest side of the Interstate-210 for about a half mile and then crosses to the northeast side of Interstate-210, along a ridge that connects to slopes with natural, native habitat that continues east, along the southern border of the communities of Sunland and Tujunga. In the vicinity of Pasko Peak, the SEA border is drawn around development in the southern edge of the community of Tujunga. The SEA border recrosses the Interstate-210 and

then La Tuna Canyon Road. The crossing boundary goes along the east side of a northern tributary of La Tuna Canyon.

A paved road goes along the stream course in La Tuna Canyon, and the SEA includes about two miles of native, natural vegetation bordered on the eastern, undeveloped section of the road. The developed western end of La Tuna Canyon Road is excluded from the SEA in a “cherry stem” configuration.

After crossing Interstate-210 and La Tuna Canyon Road, the SEA tracks the southern side of natural habitat along the Interstate-210 for about a mile. The boundary trends irregularly southeast excluding development in the flatter areas that border the Verdugo Wash in the Verdugo City District of Glendale. The SEA includes the incised canyons of Sheep Corral, Cunningham, Henderson, Engleheard, and unnamed others, which are all tributaries of the channelized Verdugo Wash.

In the relatively narrowed area around the State Route-2 (Verdugo Canyon) between the San Rafael Hills on the west and the Verdugo Mountains on the East, the SEA continues irregularly south along the natural, native vegetation of the steep hillsides of the Verdugo Mountains that border Glendale. The SEA includes many unnamed canyons and also Ayars Canyon and Deer Creek at the end of Beaudry Boulevard. The unnamed canyon north of Dead Horse Canyon has a possible wildlands connection with the San Rafael Hills. Its northeast-facing slope along Sunshine Drive has chiefly native vegetation and ends in the Verdugo Park on Verdugo Boulevard. Across Verdugo Boulevard is Glendale Community College. The College’s eastern border is a natural ridge that connects with the Mountain Avenue overpass of State Route-2 and native vegetation of the San Rafael Hills. Verdugo Boulevard and its development is a substantial block to terrestrial wildlife movement, but aerial fauna and plant seeds can connect fairly easily along this path. In the vicinity of Dead Horse Canyon, the SEA boundary turns generally westward and proceeds irregularly around development in Glendale, including natural parts of Toll, Hillcrest, Sherer, Idelwood, Pomeroy, Brand, and Childs canyons.

The lobe of the Verdugo Mountains between Hillcrest and Brand canyons is the area with the shortest possible traverse, which is a little less than two miles, to the Santa Monica Mountains in Griffith Park. Aerial fauna and plant seeds can easily make the journey, and the Los Angeles River channel at the base of the Santa Monica Mountains has developed a natural bottom and riparian habitat that must be inviting to migrants. A city park and a cemetery are on the route. The Verdugo Mountains are often viewed as one of the principle connections between the Santa Monica Mountains and the San Gabriel Mountains. However, it must be noted that this corridor is highly fragmented and probably impassable for most terrestrial wildlife.

Curving to the northwest in Burbank, the SEA boundary includes the natural, native vegetation of Elmwood, Story, Deer, and Sunset canyons. Sunset Canyon excludes a cherry-stem shaped area around a development. The Wildwood Canyon Park is included in the SEA with its many stately sycamore and coast live oak trees along the narrow stream course. In Stough Canyon the DeBell Municipal Golf course is excluded, as is the paved section of Stough Canyon Road and the buildings of the Stough Canyon Nature Center; however, the hillsides around Stough Canyon Road are included with a lobe of the SEA including the west ridge of Stough. On the west side of this ridge are the excluded Starlight Bowl and a nearby landfill. Continuing northwest, the SEA includes the natural, undeveloped uppermost elevations of McClure, Brace, Cabrini canyons in Burbank, and Fisher, Jeffries, and Chandler canyons of Sun Valley.

North of Chandler is the developed south side of La Tuna Canyon Road, where the SEA boundary turns west along natural vegetation, using lot lines in part, which delineate the extent of fuel modification in this area of high fire hazard. The SEA boundary includes the north-facing south side of La Tuna Canyon

for a distance of about three miles. The boundary crosses the road at the point where development stops and natural vegetation is on both sides of the road. From this point, the boundary continues the cherry-stem exclusion westward along the border of natural vegetation on the south-facing slope of La Tuna Canyon. Near the northwestern end of the Verdugo Mountains and La Tuna Canyon, the La Tuna stream joins the West Burbank Flood Control Channel. The SEA boundary includes the McDonald Creek drainage (tributary of La Tuna) and loops around the north ridge of McDonald Creek, changing direction to the northeast. The SEA boundary includes the natural area along the northern edge of the Verdugo Mountains by again following the edge of development in the Shadow Hills district of the City of Los Angeles. The boundary joins the northernmost point of the SEA near the undercrossing of Interstate-210 for Sunland/Foothill Boulevard.

The SEA is wholly within incorporated boundaries (cities of Los Angeles, Glendale, and Burbank), but much is preserved in conservation easements under the guidance of the Santa Monica Mountains Conservancy.

Vegetation

Vegetation within the SEA is comprised of a large variety of community types. The diversity of the communities reflects the topography of the Verdugo Mountains. The southern slopes are affected by moist marine weather conditions, while the northern slopes are influenced by drier inland weather conditions. In addition, the steepness of many slopes causes sharp differences in vegetation on either side of a ridge. All plant species observed or recorded in previous documentation within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report* and other analyses conducted for this area. Sensitive plant species and plant communities occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the SEA are given below.

Chaparral: A shrub community composed of robust species. Within this SEA, a number of chaparral subcommunities are found, and differentiated by their dominant plant species. These include chamise (*Adenostoma fasciculatum*), buck brush (*Ceanothus* spp.), scrub oak (*Quercus berberidifolia*), coast live oak (*Quercus agrifolia* var. *agrifolia*) and mosaics of these, depending on mixes of species and elevation. These and other shrub species form dense vegetation covers growing 5 to 10 feet in height. The development of chaparral is pronounced over large hillside areas throughout the SEA.

Corresponding MCV communities:

- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance
- *Adenostoma fasciculatum-Salvia apiana* (chamise-white sage chaparral) Shrubland Alliance
- *Arctostaphylos glauca* (bigberry manzanita chaparral) Shrubland Alliance
- *Ceanothus greggii* [*vestitus*] (cup leaf ceanothus chaparral) Shrubland Alliance
- *Ceanothus leucodermis* (chaparral whitethorn) Shrubland Alliance
- *Ceanothus oliganthus* (hairy leaf ceanothus chaparral) Shrubland Alliance

- *Prunus ilicifolia* (olly leaf cherry chaparral) Shrubland Alliance

Coastal Sage Chaparral Scrub: A shrubland community exhibiting less robust structure found in this SEA is coastal sage chaparral scrub. This plant community is dominated by California sagebrush (*Artemisia tridentata*), California brittle bush (*Encelia californica*), black sage (*Salvia mellifera*), and California buckwheat (*Eriogonum fasciculatum*). It also forms dense stands, which grow three to four feet in height. Within this SEA, it is generally found in scattered patches, which are highly integrated with mixed chaparral. These are primarily located in the lower elevation hillsides of the SEA.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Coast Live Oak Woodland: A plant community dominated by *Quercus agrifolia.* Within the SEA, this community includes coast live oak, which typically grows to heights of 20 to 40 feet, and forms either closed or open tree canopies. Oak woodland is most commonly found on north-facing slopes and in drainage bottoms and often intergrades with shrub communities. Understory vegetation varies from grassland in level areas to shrubs where topography is steeper.

Corresponding MCV community:

- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance

Southern Willow Scrub: Found along widely scattered reaches of several drainages throughout this SEA. This community is dominated by species of willow (*Salix* spp.), which form nearly monotypic stands due to their dense growth, with an occasional cottonwood. These stands generally reach 10 to 20 feet in height with little understory vegetation.

Corresponding MCV communities:

- *Salix lasiolepis* (arroyo willow thickets) Shrubland Alliance

Riparian Forest: Along the major drainages, riparian forest is found. Typically, riparian forest grows along streams in bedrock-constrained, steep-sided canyons, resulting in a fairly narrow riparian corridor. The specific dominant plants are not known, but riparian trees such as California bay (*Umbellularia californica*), white alder (*Alnus rhombifolia*), coast live oak, western sycamore

(*Platanus racemosa*) and willow occur. There are also a greater number of hydrophytic (moister favoring) plant species in the understory.

Corresponding MCV communities:

- *Alnus rhombifolia* (white alder groves) Forest Alliance
- *Umbellularia californica* (California bay forest) Forest Alliance
- *Quercus agrifolia* (coast live oak woodland) Woodland Alliance
- *Platanus racemosa* (California sycamore woodlands) Woodland Alliance

Wildlife

Wildlife within the SEA is generally diverse and abundant due to large acreages of natural open space and diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the entire mosaic of all the vegetation communities within the SEA and adjoining areas constitutes a functional ecosystem for a variety of wildlife species, both within the SEA and as part of the regional ecosystem.

The analysis of invertebrates is severely limited due to the lack of data; the SEA, however, undoubtedly supports healthy populations of a diverse assortment of invertebrate species. Amphibian populations are plentiful in the SEA due to the high moisture content provided by coastal conditions, as well as the large number of drainages and year-round water supplies. The SEA is also likely to support a variety of amphibians within the moister woodland areas and canyon bottoms. Many essential reptilian habitat characteristics are present within the SEA. These include rock outcroppings that allow for high visibility and small mammal burrows for cover and escape from predators and extreme weather. These characteristics, as well as the variety of habitat types present, are likely to support a wide variety of reptilian species.

The scrubland, woodland, riparian, and grassland habitats in the SEA provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, the SEA encompasses many year-round water sources that are located throughout the SEA and abundant raptor foraging, perching, and nesting habitat along the northern slopes of the Verdugo Mountains. The combination of these resources, as well as the confluence of many community types provides an unusually high diversity of bird species. Mammal populations within the SEA are diverse and reflective of the large size and variation of topography and community types.

All wildlife species previously recorded, as well as those expected to occur, within the SEA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive wildlife species occurring or potentially occurring within the SEA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

Although wildlife movement is hampered by adjacent rural development in proximity to the SEA, animals are still able to move through the Verdugo Mountains in many areas. Due to its large size and topographic complexity, many linkages occur within the SEA at various bottlenecks. These linkages allow movement between large open space areas within the SEA, as well as between areas outside the SEA toward the Angeles National Forest. The genetic flow through these areas is crucial

in maintaining the diversity and viability of the species within the Verdugo Mountains. Some areas of probable, possible, and perhaps future connection have been indicated in the General Boundary and Resources section. Although there are significantly large open spaces within the SEA, contiguous habitat linkages between them is critical in reducing bottlenecks and providing for long-term sustainability. A wide variety of wildlife use linkages throughout the SEA, including mountain lion (*Puma concolor*), coyote (*Canis latrans*), mule deer (*Odocoileus hemionus*), bobcat (*Lynx rufus*), as well as a number of medium-sized mammals.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the SEA, which have been accorded special recognition.

Sensitive Plan Communities and Habitats

The SEA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include chamise-white sage chaparral, holly leaf cherry chaparral, California brittle bush scrub, California bay forest, and California sycamore woodlands, which occur throughout the SEA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Sonoran maiden fern (*Thelypteris puberula* var. *sonorensis*) RPR 2.2
- Nevin's barberry (*Berberis nevinii*) FE, SE, RPR 1B.1
- Lewis' evening-primrose (*Camissonia lewisii*) RPR 3
- San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*) FC, SE, RPR 1B.1

- Parry's spineflower (*Chorizanthe parryi* var. *parryi*) RPR 1B.1
- Peruvian dodder (*Cuscuta obtusiflora* var. *glandulosa*) RPR 2.2
- Palmer's grapplinghook (*Harpagonella palmeri*) RPR 4.2
- Davidson's bushmallow (*Malacothamnus davidsonii*) RPR 1B.2
- White rabbit-tobacco (*Pseudognaphalium leucocephalum*) RPR 2.2
- Greata's aster (*Symphyotrichum greatae*) RPR 1B.3
- Slender mariposa lily (*Calochortus clavatus* var. *gracilis*) RPR 1B.2
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- California sawgrass (*Cladium californicum*) RPR 2.2
- California satintail (*Imperata brevifolia*) RPR 2.1
- Ocellated Humboldt lily (*Lilium humboldtii* ssp. *ocellatum*) RPR 4.2

Sensitive Animal Species

The following special-status animal species are reported or have the potential to occur within the SEA, based on known habitat requirements and known range attributes:

- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- Rosy boa (*Charina trivirgata*) BLMS, FSS
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Southern California rufous-crowned sparrow (*Aimophila ruficeps canescens*) CDFG Watch List
- Bell's sage sparrow (*Amphispiza belli belli*) BCC, CDFG Watch List
- Southwestern willow flycatcher (*Empidonax traillii extimus*) FE, FSS, SE, USBC, AWL, ABC
- Least Bell's vireo (*Vireo bellii pusillus*) FE, BCC, SE, USBC, AWL, ABC
- Pallid bat (*Antrozous pallidus*) FSS, BLMS, SSC, WBWG High
- Western mastiff bat (*Eumops perotis californicus*) BLMS, SSC, WBWG High
- Silver-haired bat (*Lasionycteris noctivagans*) WBWG Medium
- Hoary bat (*Lasiurus cinereus*) WBWG Medium
- Western yellow bat (*Lasiurus xanthinus*) WBWG High

- Big free-tailed bat (*Nyctinomops macrotis*) SSC, WBWG Medium-High
- American badger (*Taxidea taxus*) SSC

Regional Biological Value

The SEA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE VERDUGO MOUNTAINS SEA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Not Met	No critical habitats are designated within this SEA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The Verdugo Mountains combined is an extensive, relatively undisturbed island of natural vegetation in an urbanized area, which is very rare in Southern California.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	The Verdugo Mountains combined is an extensive, relatively undisturbed island of natural chaparral and canyon vegetation. It is an important island refuge for migration among the mountain ranges of the northern portion of the County. Aerial animals and plant seeds can easily traverse the distances between the Verdugo Mountains and Santa Monica, Santa Susana, and the San Gabriel mountains. The Verdugo Mountains serve as the centerpiece of these connections. The hillsides are covered by chaparral and coastal sage chaparral scrub. The canyons' riparian vegetation includes California bay, sycamores, ferns and tiger lilies. These plant communities provide habitat that is essential to the diverse and abundant fauna found in the area.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The Verdugo Mountains serve as an arm of the San Gabriel Mountains, extending towards the eastern end of the Santa Monica Mountains in Griffith Park—only two miles distant. Aerial animals and plant seeds easily cross the gap. The Verdugo Mountains are exceedingly important for connections among the Santa Monica, Santa Susana, and the San Gabriel mountains. Genetic interchange, by way of this linkage, is important in perpetuating the genetic variability in isolated populations, which maintains healthy ecosystems and resilience to climate change.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The geographic location of the Verdugo Mountains makes them important for scientific study, genetic interchange between otherwise isolated populations, and recreation for urban residents. The area has already been used for studies concerned with public health.

F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	The Verdugo Mountains have been impacted by dirt roads, one paved road in Tuna Canyon, fuel breaks, transmission lines and isolated buildings for houses, radio towers, and water tanks. Because of their extent, however, the Verdugo Mountains are still considered largely natural and little impacted—a prime example of the chaparral and coastal sage chaparral scrub once prevalent in the County coastal areas.

In conclusion, the area is an SEA because it contains: B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

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Coastal Resource Area Descriptions

The following are detailed descriptions of each of the nine Coastal Resource Areas:

Alamitos Bay CRA

Location

General

The Alamitos Bay Coastal Resource Area (CRA) is located upstream of the Alamitos Bay Marina, off the Los Cerritos Channel of the City of Long Beach. The CRA boundaries encompass the Alamitos Bay salt marsh, which is one of three remaining examples of salt marshes found in the County. The entire CRA area has been identified by the California Audubon as a Globally Important Bird Area (IBA)—part of the Los Cerritos Wetlands and adjacent oil fields section of the Orange Coast Wetlands unit. The entire CRA is located within the United States Geological Survey (USGS) 7.5' California Los Alamitos Quadrangle.

General Boundary and Resources Description

The CRA boundaries generally follow the Alamitos Bay salt marsh area, which is bordered by an oil field, main artery roads, the Cerritos Channel, and residential development. The CRA is situated to the west of Studebaker Road, north of Westminster Avenue, east of Pacific Coast Highway and south of Loynes Drive and the Cerritos Channel within the City of Long Beach.

The CRA is one of three remaining examples of salt marsh found in the County, and the last remnant of the extensive salt marshes once found in Los Alamitos Bay. The majority of this vegetation type has been lost to urbanization, flood control projects, harbors, and marinas. It is one of the most productive ecological communities and is an important breeding ground for terrestrial and marine organisms, including the majority of commercial fishes. This is due in part to the estuaries and salt marshes interfacing between the terrestrial and marine worlds, and serving as important nutrient cycling centers for marine ecosystems. The Belding's savannah sparrow occurs in Alamitos Bay salt marsh. This species is restricted to salt marsh habitat, and has been placed on the state-endangered species list. The Orange Coast Wetlands IBA is believed to harbor one-eighth of the population of Belding's savannah sparrows, and there is a significant amount in Alamitos Bay. Least terns and other terns that breed in the area often use Alamitos Bay and the Cerritos arm as a foraging area. This type of habitat is an important wintering ground for migratory birds. It is estimated that in the fall and spring seasons, the Orange Coast Wetlands IBA hosts 15,000-20,000 individual migrating birds.

Vegetation

As discussed, the CRA encompasses the last remaining coastal salt marsh in Los Alamitos Bay's formerly extensive system of salt marshes and is one of only three such examples of this habitat remaining in County. Sensitive plant species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

<u>Coastal Salt Marsh</u>: Consists of salt-tolerant plants that are mostly low-growing herbaceous perennials that are found on the borders of marine salt water bodies. The duration and extent of tidal inundation or influence causes a graduation in the prevalence of various species within this community. In the Alamitos Bay wetlands, this includes cordgrass as the dominant species and depending on the conditions, pickleweed, salt grass, alkali heath and spearscale can also be found.

Corresponding MCV communities:

- Sarcocornia pacifica (Salicornia depressa) ([Salicornia pacifica, Salicornia depressa] pickleweed mats) Herbaceous Alliance
- Bolboschoenus maritimus (salt marsh bulrush marshes) Herbaceous Alliance
- Distichlis spicata (salt grass flats) Herbaceous Alliance
- Spartina foliosa (California cordgrass marsh) Herbaceous Alliance

Intertidal Flats: Brackish coastal wetlands of low-lying basins of high evaporation and infrequent inputs of freshwater with low-growing salt tolerant plants.

Corresponding MCV Communities:

- *Ruppia* (*cirrhosa, maritima*) (ditch-grass or widgeon-grass mats) Aquatic Herbaceous Alliance

Wildlife

Coastal salt marshes and estuaries are productive habitats, which are used for foraging and breeding grounds, for both resident and migrating wildlife species. Estuaries and coastal salt marshes are the interface between the terrestrial and marine worlds, and are important nutrient recycling centers for marine ecosystems. In the past, this habitat was once extensive in the Los Alamitos Bay area.

Although little documentation regarding the types of animals present has been found, based on the apparent health of the ecosystem, it may be assumed that fishes that are commonly found in the vicinity can also be found in the CRA. These may include species, such as arrow goby, California halibut, cheekspot goby, diamond turbot, queenfish, shadow goby, shiner perch, topsmelt, longjaw mudsucker, Pacific staghorn sculpin, and yellowfin goby.

Without more information, it is not possible to predict whether any reptiles or mammals can be found, but it is likely that amphibians, such as Baja California chorus frogs, are present.

The CRA habitat probably supports a variety of bird species found in the few coastal saltmarshes that remain in coastal Southern California. Belding's savannah sparrow has been observed in the CRA. Shallow water habitat exists and would be expected to attract wading birds and ducks. Foraging habitat that is attractive to raptors appears to be present on the outside perimeter of the marsh.

Wildlife Movement

The CRA provides a variety of saltwater, estuarine, mudflat and freshwater marsh habitats, and is an important stopover for many migratory birds traveling the Pacific Flyway migration route. Its suitability for many fishes and invertebrates allows populations that are capable of supporting further colonization and expansion of range. The area does not fall within any identified terrestrial movement routes for wildlife.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or

rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the CRA, which have been accorded special recognition.

Sensitive Plan Communities and Habitats

The CRA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The CRA is configured to encompass the regionally significant community of a coastal salt marsh or coastal brackish marsh. This community or closely related designations are considered highest priority communities by the CDFG, indicating that they are declining in acreage throughout their range due to land use changes. The array and composition of these communities have been discussed in the Vegetation section. Changes to the classification system mentioned earlier in some cases divide plant communities into many possible vegetation alliances—not all of which may be considered sensitive. Previously listed communities with at least one sensitive alliance in the new format have been listed.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the CRA, based on known habitat requirements and geographic range information:

- Davidson's saltscale (*Atriplex serenana var. davidsonii*) RPR 1B.2
- Southern tarplant (*Centromadia parryi ssp. australis*) RPR 1B.1
- Salt marsh bird's-beak (*Chloropyron maritimum ssp. maritimum*) FE, SE, RPR 1B.2
- Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*) RPR 1B.1
- Coast woolly-heads (*Nemacaulis denudata var. denudata*) FT, RPR 1B.1
- California Orcutt grass (*Orcuttia californica*) FE, SE, RPR 2.1
- Estuary seablite (*Suaeda esteroa*) RPR 1B.2
- San Bernardino aster (*Symphyotrichum defoliatum*) RPR 1B.2

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the CRA based on habitat requirements and known range attributes:

- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) SE
- California least tern (*Sternula antillarum browni*) FE, SE, ABC, CDFG Fully Protected

CRARegional Biological Value

The CRA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE ALAMITOS BAY CRA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	Los Alamitos Bay is one of only three remaining salt marshes found in the County, and a remnant of extensive salt marshes once found in its area. (The others are the Ballona Wetlands off of Santa Monica Bay and the Malibu Lagoon.) It is the type habitat of Belding's savannah sparrow, which is an endangered species, that is still found in the much reduced habitat of the salt marshes of Southern California.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Salt marsh is reduced and fragmented from its former coverage in Southern California, so it is important to preserve any of these important estuarine areas.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Los Alamitos Bay is one of only three remaining salt marshes found in the County, which is a remnant of extensive salt marshes once found in the area.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The Belding's savannah sparrow lives its entire life in salt marshes and breeds, rests, and feeds in this area. Salt marshes are important nursery grounds for many marine animals, and diminished fisheries for many are attributed to the loss of salt marshes. Salt marshes are important habitat for migrating marine birds, which utilize the abundant forage produced by the marsh in the form of mud animals and insects.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	As one of only three salt marshes in the County, this area is scientifically interesting for the study of island bio-geography in that salt marshes are now islands, whereas they were once almost continuous in the seismically active coastline of Southern California. The three marshes differ from one another in dominant vegetation.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic	Met	Los Alamitos Bay is one of only three remaining salt marshes found in the County, which is a remnant of extensive salt marshes once found in its area. The majority of this habitat type has been lost to urbanization, flood control projects, harbors, and marinas. Salt

Criterion		Status	Justification
	communities in the County.		marshes are a very productive vegetative community and an important breeding and nursery area for marine, marsh, and terrestrial animals—an ecotone where multiple habitats meet and combine resident biota. Many commercially valuable fishes start life in salt marshes.

In conclusion, the area described in this report is a CRA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; and D) concentrated breeding, feeding, resting, or migrating grounds that are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.

Ballona Wetlands CRA

Location

General

The Ballona Wetlands Coastal Resource Area (CRA) is located south of Marina Del Rey, north of Playa Del Rey, and west and northwest of Playa Vista. One extending arm reaches north to the State Route-90 overcrossing and another reaches south to include the restored freshwater marsh adjacent to the Playa Del Rey and Playa Vista districts of the City of Los Angeles. The Ballona Wetlands are a remnant of what was the County's largest coastal lagoon. The Ballona watershed covers over 130 square miles, and the lagoon area was so large (about 11-12 square miles) that it included freshwater peripheries. Incorporated in the lagoon complex were 10 kinds of habitat that ranged from coastal saltwater marsh to grassy prairie to oak and willow woodland adjacent to freshwater areas. The lagoon connected via Ballona Creek that sometimes was the Los Angeles River, to La Cienega, a large swampy area (about 13-14 square miles) that was north and east of the Baldwin Hills. The CRA lies at the base of the Ballona Creek watershed and includes part of the Ballona Creek flood control channel that drains the total of 130 square miles, from what is now a highly urbanized area. While the Ballona Wetlands ecosystem has been substantially degraded over the years due to human activity and urban development, it is still a rich ecological system that bridges the gap between aquatic marine and freshwater land environments. It provides crucial habitat for hundreds of plant and animal species.

The CRA is in part of the California Audubon-designated Ballona Wetlands State Important Bird Area (IBA). The IBA is more extensive than the CRA, and includes all of the Marina Del Rey waterways, some of the Strand Beach to the south, Del Rey Lagoon and Ballona Lagoon, and extends up the Bluff Creek (source creek for the restored freshwater marsh) at the base of the south Ballona bluff as far as Centinela Avenue. This area is very important to avian life and has a great diversity of bird types ranging from those associated with salt water marsh to those associated with freshwater marsh to raptors that feed over grasslands.

The CRA is located on unincorporated land in the community of Marina Del Rey north of the Ballona Creek Channel and in the City of Los Angeles south of the Ballona Creek Channel. It is within the United States Geological Survey (USGS) 7.5' California Venice Quadrangle.

General Boundary and Resources Description

The CRA is surrounded by urban and residential uses. The CRA is bordered by Fiji Way in Marina Del Rey on the northeast, and has an arm that extends northeast to the State Route-90 overcrossing. This arm includes an undeveloped area of mixed native and non-native shrubs and grasses, and is bordered by Culver Boulevard on its south edge. The north boundary crosses the Ballona Creek Channel directly south of the end of Fiji Way, and goes west on the south side of Ballona Creek, which delineates the CRA's western half. The boundary turns southward, then eastward at the development in Playa Del Rey. The boundary goes north to Jefferson Boulevard along a gas line road, and then continues eastward on the north side of Jefferson Boulevard, as far as the area that has been restored as a freshwater marsh. The boundary turns southward and eastward to enclose the freshwater marsh. At the boundary of the freshwater marsh along Lincoln Boulevard, the boundary follows the west side of Lincoln Boulevard crossing Jefferson Boulevard, Ballona Wetlands, and connecting to the south side of the north arm where it crosses Culver Boulevard. Most of the area is a mixture of native and non-native shrubs and grasses, with a strong influence of brackish conditions. The northern side of the Ballona Creek Channel was a tidal mud flat in the original Ballona Lagoon that received a large amount of the dredge spoil when Marina Del Rey was created. However, there is enough natural forage in the wetlands to sustain a breeding colony of great blue herons and a breeding colony of black-crowned night herons in the trees of nearby Marina Del Rey.

Ballona Wetlands is one of three remaining remnants of salt marsh in the County (the other two are Malibu Lagoon in the Santa Monica Mountains SEA and the Cerritos Channel salt marsh in the Alamitos Bay CRA). This type of habitat is one of the most productive in the world, and is used as a breeding ground by many marine and terrestrial organisms. Belding's savannah sparrow (*Passerculus sandwichensis beldingi*), which is a state-recognized endangered species, resides in the pickleweed flats on the south side of the Ballona Wetlands. The California least tern (*Sternula antillarum browni*) breeds in the sandy areas around Ballona Lagoon and on Venice Beach, and is recognized as an endangered species by the state and federal governments. The terns forage in the waterways that are included in the CRA.

The salt marsh, Ballona Creek Channel, Ballona Lagoon, and Del Rey Lagoon form an important complex of habitats that are heavily used by migratory birds. The area is recognized by ornithologists and bird watchers throughout the area for its rich birdlife during the spring and fall migrations, and during the winter season. This type of heavy use is common in salt marsh habitat, and has been made more intense by the loss of habitat in Marina Del Rey, and throughout most of Southern California. This forces these birds to concentrate in the few remaining areas. Loss of this habitat type has led to reductions in the numbers of these birds present along the coast.

The salt marsh and lagoon at Ballona Creek are heavily used by academic institutions and conservation groups for educational field trips. This area serves as a type specimen of salt marsh habitat, and is the only easily accessible example in the County.

Vegetation

There are two categories of habitat in the CRA: wetland and upland altered or created by filling and grading. The wetland is characterized by coastal salt marsh and freshwater marsh. The upland is

represented by a disturbed coastal sage scrub, non-native annual grassland, and coastal bluff and dune scrub. Sensitive plant species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the CRA are given below.

Coastal Salt Marsh: Consists of salt tolerant plants that are mostly low-growing herbaceous perennials found on the borders of marine salt water bodies. The duration and extent of tidal inundation or influence causes a graduation of various species prevalence within this community. In the Ballona Wetlands this includes the areas where pickleweed (*Salicornia pacifica*) is a dominant species and depending on the conditions other plants such as California cordgrass (*Spartina foliosa*), salt grass (*Distichlis spicata*), alkali heath (*Frankenia salina*) and spearscale (*Atriplex prostrata*) can be found.

Corresponding MCV communities:

- Sarcocornia [Salicornia] pacifica (Salicornia depressa) (pickleweed mats) Herbaceous Alliance
- Bolboschoenus maritimus (salt marsh bulrush marshes) Herbaceous Alliance
- Distichlis spicata (salt grass flats) Herbaceous Alliance
- Spartina foliosa (California cordgrass marsh) Herbaceous Alliance

Intertidal Flat: Brackish coastal wetlands of low-lying basins of high evaporation and infrequent inputs of freshwater with low-growing salt tolerant plants.

Corresponding MCV Communities:

- *Ruppia* (*cirrhosa*, *maritima*) (ditch-grass or widgeon-grass mats) Aquatic Herbaceous Alliance

Freshwater Marsh: Develops in areas of still or slow-moving permanent freshwater. In the CRA, this community may be dominated by perennial, emergent cattails (*Typha* spp.), which reach a height of four to five meters and often form a closed canopy. Bulrushes (*Schoenoplectus* spp.) are dominant below the cattail canopy. Freshwater marsh is relatively uncommon; it occurs in small patches in natural or created sinks with water sources.

Corresponding MCV communities:

- *Lepidium latifolium* (perennial pepper weed patches) Semi-Natural Herbaceous Stands
- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance
- *Typha* (*angustifolia*, *domingenis*, *latifolia*) (cattail marshes) Herbaceous Alliance
- *Sarcocornia* [*Salicornia*] *pacifica* (*Salicornia depressa*) (pickleweed mats) Herbaceous Alliance
- *Juncus articus* (var. *balticus, mexicanus*) [*Juncus balticus* ssp. *ater*, *J. mexicanus*] (Baltic and Mexican rush marshes) Herbaceous Alliance

- *Juncus effusus* (soft rush marshes) Herbaceous Alliance

- *Lemna (minor)* and relatives (duckweed blooms) Provisional Herbaceous Alliance

Coastal Sage Scrub: Occurs in Southern California where moisture is available in the upper horizons during the winter-spring growing season. Plants that are adapted to these conditions are a mixture of herbaceous and weakly woody, shrubby and drought deciduous types. This includes species such as California sagebrush (*Artemisia tridentata*), coyote brush (*Baccharis pilularis*) and laurel sumac (*Malosma laurina*).

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance

- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance

- *Encelia californica* (California brittle bush scrub) Shrubland Alliance

- *Salvia mellifera* (black sage scrub) Shrubland Alliance

- *Eriogonum cinereum* (ashy buckwheat scrub) Shrubland Alliance

- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance

- *Hazardia squarrosa* (sawtooth golden bush scrub) Shrubland Alliance

- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance

- *Lupinus albifrons* (silver bush lupine scrub) Shrubland Alliance

Coastal Bluff and Dune Scrub: A remnant of the El Segundo Dune system that occupied coastal areas along much of the Santa Monica Bay. The system consists of fine, sandy soil that dries rapidly. Plants typical of the dune scrub include dune buckwheat (*Eriogonum parvifolium*), rattle pod (*Astragalus trichopodus var. lonchus*), bladderpod (*Peritoma arborea*), deer weed (*Acmispon glaber*), sawtooth goldenbush (*Hazardia squarrosa*), and California sunflower (*Helianthus californicus*)

Corresponding MCV communities:

- *Baccharis pilularis* (coyote brush scub) Shrubland Alliance

- *Lupinus arboreus* (yellow bush lupine scrub) Shrubland Alliance and Semi-Natural Shrubland Stands

- *Lupinus chamissonis-Ericameria ericoides* (silver dune lupine–mock heather scrub) Shrubland Alliance

Non-native Grassland Communities: Consist of low, herbaceous vegetation that are dominated by invasive grasses that are primarily of Mediterranean origin, but can also harbor native forbs and bulbs, as well as naturalized annual forbs. Species found within this community include wild oat (*Avena fatua*), slender oat (*Avena barbata*), red brome (*Bromus madritensis ssp. rubens*), ripgut brome (*Bromus diandrus*), and herbs such as black mustard (*Brassica nigra*) and wild radish (*Raphanus raphanistrum*). This community can be found throughout the CRA, but are less common in the moist soils found in and close to the salt and fresh water marshes.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) Semi-Natural Herbaceous Stands
- *Brassica* (*nigra*) and other mustards Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus (arabicus, barbatus)* ([*Bromus madritensis* ssp. *rubens*] red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Centaurea (solstitialis, melitensis)* (yellow star-thistle fields) Semi-Natural Herbaceous Stands
- *Lolium perenne* [*Festuca perennis*] (perennial rye grass fields) Semi-Natural Herbaceous Stands

Wildlife

Coastal salt marshes are productive habitats that are used for foraging and breeding grounds, for both permanent resident and migrating wildlife species. The CRA is an important site due to the rarity of this type of habitat, which was once more extensive in Southern California.

Studies in the last 30 years in the vicinity have identified a total of 44 species of fishes. Types found include arrow goby (*Clevelandia ios*), California halibut (*Paralichthys californicus*), cheekspot goby (*Ilypnus gilberti*), diamond turbot (*Hypsopsetta guttulata*), queenfish (*Seriphus politus*), shadow goby (*Acentrogobius nebulosus*), shiner perch (*Cymatogaster aggregata*), topsmelt (*Atherinops affinis*), longjaw mudsucker (*Gillichthys mirabilis*), Pacific staghorn sculpin (*Leptocottus armatus*), and yellowfin goby (*Acanthogobius flavimanus*).

Many native species of reptiles and amphibians have been found in the CRA. These include common kingsnake, San Diego gopher snake (*Pituophis catenifer annectens*), western side-blotched lizard (*Uta stansburiana elegans*), San Diego alligator lizard (*Elgaria multicarinata webbii*), Great Basin fence lizard (*Sceloporus occidentalis longipes*), California slender salamander (*Batrachoseps attenuatus*) and California legless lizard (*Anniella pulchra*). Baja California chorus frog (*Pseudacris hypochondriaca*) and California toad (*Anaxyrus halophilus*) are very common in season. No invasive species of amphibians or reptiles have been reported in the CRA.

Native species of mammals found included western harvest mouse (*Reithrodontomys megalotis* (*western harvest mouse*), Botta's pocket gopher (*Thomomys bottae*), desert cottontail (*Sylvilagus audubonii*), striped skunk (*Mephitis mephitis*), raccoon (*Procyon lotor*), California ground squirrel (*Spermophilus beecheyi*), and the sensitive species south coast marsh vole (*Microtus californicus stephensi*). Invasive species found include house mouse (*Mus musculus*), black rat (*Rattus rattus*), Norway rat (*R. norvegicus*), domestic cat (*Felis domesticus*), Virginia opossum (*Didelphis virginiana*),

and domestic dog (*Canis familiaris*). Low populations of small mammals are likely to be due to depredation by introduced red foxes, which are an immediate threat to the continued viability of the Ballona ecosystem.

The Ballona Wetlands provide habitat for a variety of bird species attracted to the few coastal saltmarshes that remain in coastal Southern California. Shallow water habitat for wading birds and ducks occurs in the northwestern portion of the CRA. No deep water is present for diving ducks and other birds that dive from the surface for fish. Foraging habitat for most raptors occurs in the western portion. Many bird species forage in the CRA, and the wetlands are used during migration and nesting. A resident population of Belding's savannah sparrow, which is a state-endangered species, was present in 2006 and the state and federally-endangered California least tern and fully protected American peregrine falcon (*Falco peregrinus anatum*) have been known to forage in this CRA. In 2010, least Bell's vireos (*least Bell's vireo*) successfully nested at the freshwater marsh, and many migrants have been observed there.

Sensitive wildlife species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The CRA is an important stopover for many migratory birds traveling the Pacific Flyway migration route. For many birds this area, it is important because it provides a variety of salt-water, estuarine, mudflat and freshwater marsh habitats. It offers many fishes and invertebrates an opportunity to establish populations capable of supporting further colonization to expand their range. The area does not fall within any identified terrestrial movement routes for wildlife.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the CRA, which have been accorded special recognition.

Sensitive Plant Communities and Habitats

The CRA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. The CRA is configured to encompass regionally significant communities, which include pickleweed mats, salt marsh bulrush marshes, California cordgrass marsh, ditch-grass or widgeon-grass mats, California brittle bush scrub, ashy buckwheat scrub, sawtooth golden bush scrub, and silver dune lupine–mock heather scrub. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Changes to the classification system mentioned earlier in some cases divides plant communities into

many possible vegetation alliance communities, not all of which may be considered sensitive. For this CRA description, previously listed communities with a least one sensitive alliance in the new format have been listed.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the CRA, based on known habitat requirements and geographic range information:

- Aphanisma (*Aphanisma blitoides*) RPR 1B.1
- Marsh sandwort (*Arenaria paludicola*) RPR FE, SE, 1B.1
- Ventura marsh milk-vetch (*Astragalus pycnostachyus var. lanosissimus*) FE, SE, RPR 1B.1
- South Coast saltscale (*Atriplex pacifica*) RPR 1B.2
- Parish's brittlescale (*Atriplex parishii*) RPR 1B.1
- Davidson's saltscale (*Atriplex serenana var. davidsonii*) RPR 1B.2
- Southern tarplant (*Centromadia parryi ssp. australis*) RPR 1B.1
- Orcutt's pincushion (*Chaenactis glabriuscula var. orcuttiana*) RPR 1B.1
- Coastal goosefoot (*Chenopodium littoreum*) RPR 1B.2
- Salt marsh bird's-beak (*Chloropyron maritimum ssp. maritimum*) FE, SE, RPR 1B.2
- Beach spectaclepod (*Dithyrea maritima*) ST, RPR 1B.1
- Los Angeles sunflower (*Helianthus nuttallii ssp. parishii*) RPR 1A
- Coulter's goldfields (*Lasthenia glabrata ssp. coulteri*) RPR 1B.1
- Mud nama (*Nama stenocarpum*) RPR 2.2
- Gambel's water cress (*Nasturtium gambelii*) FE, SE, RPR 1B.1
- Coast woolly-heads (*Nemacaulis denudata var. denudata*) RPR 1B.2
- Ballona cinquefoil (*Potentilla multijuga*) RPR 1A

- Estuary seablite (*Suaeda esteroa*) RPR 1B.2

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the CRA based on habitat requirements and known range attributes:

- Mimic tryonia (*Tryonia imitator*) CDFG Special Animals List
- Wandering skipper (*Panoquina errans*) CDFG Special Animals List
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- San Bernardino ringneck snake (*Diadophis punctatus modestus*) FSS
- Western pond turtle (*Emys marmorata*) BLMS, FSS, SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Tricolored blackbird (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Burrowing owl (*Athene cunicularia*) BCC, BLMS, SSC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, BCC, SSC, ABC, AWL, USBC
- California black rail (*Laterallus jamaicensis coturniculus*) BCC, ST, CDFG Fully Protected, USBC, AWL, ABC
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) SE
- California least tern (*Sternula antillarum browni*) FE, SE, CDFG Fully Protected, USBC, ABC
- Vireo bellii pusillus (*least Bell's vireo*) FE, SE, ABC
- South coast marsh vole (*Microtus californicus stephensi*) SSC
- Pacific pocket mouse (*Perognathus longimembris pacificus*) FE, SSC
- Southern California saltmarsh shrew (*Sorex ornatus salicornicus*) SSC

Regional Biological Value

The CRA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

Criteria Analysis of the Ballona Wetlands CRA

Criterion	Status	Justification

A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	Least Bell's vireos are beginning to use the restored freshwater marsh component for breeding. Given time, this could become one of the important breeding areas for them in the coastal area. Belding's savannah sparrow lives in the salt marsh savannah. Least terns breed nearby and forage year round in the shoal water areas of the CRA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	There are three remaining salt marsh areas in the County: Cerritos Marsh in the Alamitos Bay CRA, Malibu Lagoon, and the CRA. In addition, there is a restored freshwater marsh on the periphery of Ballona Wetlands. The union of these two habitats is very rare in Southern California.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	There are three remaining salt marsh areas in the County: Malibu Lagoon, the marsh in Alamitos Bay CRA, and CRA. In addition there is a restored freshwater marsh on the periphery of Ballona Wetlands. Salt marsh coupled with freshwater marsh, is very rare in the County. There is no other such representation in the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	Endangered least Bell's vireos are using the freshwater marsh for breeding—they do not commonly occur in saltwater marshes, but were probably common on the peripheries in the freshwater portions. This restoration returns some of the former diversity and adds an important area for breeding. Many commercially valuable marine fishes start life in salt and estuarine marsh areas. The Ballona Wetlands are an important stopover point for migrations on the Pacific Flyway.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The union of the salt marsh and freshwater marsh habitats has no other representation in the County and is therefore of great scientific interest. As the only easily accessible saltwater marsh, the Ballona Wetlands have great educational value. This kind of ecotone is usually in very short supply, and will always be an extreme kind of physical habitat, a meeting point for the coastal strand, the brackish area of the marsh, and the freshwater area of the upland.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Not Met	Without implementation of restoration activities, this CRA does not provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.

In conclusion, the area is a CRA because it contains: A) habitat that hosts breeding for the endangered least Bell's vireo; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are unique and are restricted in distribution in the County and regionally; and D) concentrated breeding, feeding, resting, and migrating grounds, which are limited in availability in the County; and E) biotic resources that are of scientific interest because they are

either an extreme in physical/geographical limitations, or represent unusual variation in a population or community

El Segundo Dunes CRA

Location

General

The El Segundo Dunes Coastal Resource Area (CRA) is located between the west end of the Los Angeles International Airport (LAX) and the Pacific Ocean. The CRA is the largest remaining coastal dune habitat in Southern California. The federally-endangered El Segundo blue (*Euphilotes battoides allyni*) butterfly lives its entire life in these dunes.

The entire CRA is located in the United States Geological Survey (USGS) 7.5' California Quadrangle of Venice.

General Boundary and Resources Description

The CRA boundaries are as follows: Sandpiper Street to the north, Pershing Drive to the east, Imperial Highway to the south, and Vista Del Mar Road to the west. This is the largest of four proposed critical habitat areas for the El Segundo blue butterfly. The Vista Del Mar Park on Vista Del Mar Road is excluded from the CRA.

The ecological significance of the El Segundo Dunes is recognized by both federal and state governments, as well as by the City and County of Los Angeles and the California Coastal Commission (CCC). The vegetation found here does not occur anywhere else in the County, and is uncommon throughout Southern California. The vegetation is southern dune scrub, which is adapted to sandy, well-drained soils. The vegetation shows zonation, changing gradually as one moves from the foredunes facing west and the ocean over the dune crest and into coastal sage scrub. Many plants and invertebrates are specifically adapted and restricted to this environment and are not found elsewhere. One of these endemic organisms is the El Segundo blue butterfly, a federally-endangered butterfly species. The distribution of this butterfly is entirely restricted to the El Segundo Dunes and a few specks of dune habitat south to the edge of Malaga Cove (all once part of the El Segundo Dune sysytem). Because of its rarity and highly limited range, the butterfly is officially recognized as an endangered species by the U.S. Fish and Wildlife Service. This small piece of dune habitat is extremely valuable as the final example of a community that was once more common along the County and Southern California coastline.

Vegetation

Vegetation within the CRA is a remnant of a formerly more widespread distribution in the Los Angeles area of plant communities defined by their proximity to the immediate coast with its unique environmental conditions and sandy soils. The area has a long history of land disturbance and increasing isolation from related habitats. Today, the CRA has three plant communities with relatively few species. Importantly, the dune buckwheat (*Eriogonum parvifolium*), which is the only host plant for the larvae of the rare El Segundo blue butterfly, is found there, and the buckwheat population is isolated from other populations. Sensitive plant species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

Descriptions and general locations of the each plant community present within the CRA are given

below.

Coastal Strand Vegetation: A community that occurs in the loose sand just above the high tide line of the beach. This community is characterized by a low species diversity because few plants can tolerate the harsh conditions on this dry, sandy, saline soil with buffeting by high winds, salt spray and high summer temperatures.

Corresponding MCV communities:

- Abronia latifolia – Ambrosia chamissonis (dune mat) Herbaceous Alliance
- Cakile (edentula, maritima) (sea rocket stands) Semi-Natural Provisional Herbaceous Alliance

Coastal Bluff and Dune Scrub: A remnant of the El Segundo Dune system that occupied coastal areas along much of the Santa Monica Bay. In the CRA, the coastal bluff and dune scrub is found in a strip along the immediate coastal sections of the CRA. The system consists of fine, sandy soil that dries rapidly. Plants typical of the dune scrub include dune buckwheat (*Eriogonum parvifolium*), rattle pod (*Astragalus trichopodus* var. *lonchus*), bladderpod (*Peritoma arborea*), deer weed (*Acmispon glaber*), sawtooth goldenbush (*Hazardia squarrosa*), and California sunflower (*Helianthus californicus*).

Corresponding MCV communities:

- *Baccharis pilularis* (coyote brush scrub) Shrubland Alliance
- *Lupinus arboreus* (yellow bush lupine scrub) Shrubland Alliance and Semi-Natural Shrubland Stands
- *Lupinus chamissonis-Ericameria ericoides* (silver dune lupine–mock heather scrub) Shrubland Alliance

Coastal Sage Chaparral Scrub: Characterized by the summer drought deciduous vegetation found near the Southern California coast of low, mostly soft-woody shrubs with bare ground underneath and between shrubs. This community is dominated by California sagebrush, California buckwheat (*Eriogonum fasciculatum*), black sage (*Salvia mellifera*), purple sage (*Salvia leucophylla*), and California brittle bush (*Encelia californica*) and intergrades with the coastal bluff and dune scrub near the shore and gradually becomes more evident near the crest of the site

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance
- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance

- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Hazardia squarrosa* (sawtooth golden bush scrub) Shrubland Alliance
- *Lotus scoparius* [*Acmispon glaber*] (deer weed scrub) Shrubland Alliance
- *Lupinus albifrons* (silver bush lupine scrub) Shrubland Alliance

Wildlife

An assessment of wildlife is made difficult due to the lack of data but the animal populations within the CRA probably reflect a somewhat lower diversity and abundance for the habitat types present for several reasons, including: the small area of the dune habitat, the homogeneity of the topography and habitat, influences of edge effect from developments to the north and south, the ocean to the west and the impact of being under the flight paths of aircraft departing from LAX to the east.

One key occupant of the area is the El Segundo blue butterfly, which is found here and also in a very few other locations to the south in remnants of the former dune complex. The El Segundo blue butterfly co-occurs with the only known plant species that supports its complete lifecycle, the dune buckwheat (*Eriogonum parvifolium*). The adult butterfly uses the flowers as a major source of nectar, and the larvae feed only on the flowers and seeds.

Amphibian populations are generally scarce in beachfront communities and no riparian habitat is available within the CRA. Many essential reptilian habitat characteristics, such as open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather, are present within the CRA. The scrubland habitats in the CRA probably provide foraging and cover habitat for year-round resident and seasonal resident song birds. In addition, the CRA provides some raptor foraging habitat, so they can be expected visitors. Mammal populations probably reflect the generally disturbed environs influencing this CRA. Small mammals are expected to be uneven in their diversity, with more adaptive species and introduced European species occurring in higher numbers compared to others. Medium sized mammal populations are expected to exhibit the same characteristics. Resident large mammals are absent. Sensitive wildlife species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The CRA is on the Pacific Flyway migration route used by many birds seasonally. The dune habitat probably does not play an important role as a stopover because of its limited resources, due its small size; however, it will attract some birds because it is one of the few undeveloped places along the coast. The area does not fall within any identified terrestrial movement routes for wildlife.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the CRA, which have been accorded

special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. However, for species listed previous to 1978, critical habitat areas rarely are designated officially. Sometimes such areas are called "essential habitat," which would be the case here for the El Segundo blue butterfly.

Sensitive Plant Communities and Habitats

The CRA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These include dune mat, silver dune lupine–mock heather scrub, California brittle bush scrub, and sawtooth golden bush scrub. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the CRA, based on known habitat requirements and geographic range information:

- Aphanisma (*Aphanisma blitoides*) RPR 1B.1
- Coastal dunes milk-vetch (*Astragalus tener* var. *titi*) FE, SE, RPR 1B.1
- Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*) RPR 1B.1
- Beach spectaclepod (*Dithyrea maritima*) ST, RPR 1B.1
- Coulter's goldfields (*Lasthenia glabrata* ssp. *coulteri*) RPR 1B.1
- Brand's star phacelia (*Phacelia stellaris*) FC, RPR 1B.1

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the CRA based on habitat requirements and known range attributes:

- Belkin's dune tabanid fly (*Brennania belkini*) CDFG Special Animals List
- Busck's gallmoth (*Carolella busckana*) CDFG Special Animals List

- Sandy beach tiger beetle (*Cicindela hirticollis gravida*) CDFG Special Animals List
- Senile tiger beetle (*Cicindela senilis frosti*) CDFG Special Animals List
- Globose dune beetle (*Coelus globosus*) CDFG Special Animals List
- Henne's eucosman moth (*Eucosma hennei*) CDFG Special Animals List
- El Segundo blue butterfly (*Euphilotes battoides allyni*) FE, Xerces: Critical
- Lange's El Segundo Dune weevil (*Onychobaris langei*) CDFG Special Animals List
- El Segundo flower-loving fly (*Rhaphiomidas terminatus terminatus*) CDFG Special Animals List
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Coastal whiptail (*Aspidoscelis tigris stejnegeri*) CDFG Special Animals List
- San Bernardino ringneck snake (*Diadophis punctatus modestus*) FSS
- Coast horned lizard (*Phrynosoma blainvillii*) BLMS, FSS, SSC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, BCC, SSC, ABC, AWL, USBC
- California black rail (*Laterallus jamaicensis coturniculus*) BCC, ST, CDFG Fully Protected, USBC, AWL, ABC
- California least tern (*Sternula antillarum browni*) FE, SE, CDFG Fully Protected, USBC, ABC
- Pacific pocket mouse (*Perognathus longimembris pacificus*) FE, SSC

Regional Biological Value

The CRA meets several SEA designation criteria incorporating regional biological values. Each criterion and how it is met is described below.

Criteria Analysis of the El Segundo Dunes CRA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	The El Segundo Dunes is one of four known localities in the world where one can find the endangered El Segundo blue butterfly. All four areas are remnants of a once continuous three-mile system of seacoast dunes in the County. The blue's habitat is the coastal dune buckwheat, on which the butterfly lays its eggs and the larvae feed.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either	Met	The southern dune scrub vegetation has become very uncommon in the Southern California region due to the conversion of the habitat to seacoast dwellings, hotels, and other development. The vegetation thrives on sandy,

	unique or are restricted in distribution.		well-drained soils, and grades into coastal sage scrub on the inland side. Many plants and invertebrates are restricted to this environment and are not found elsewhere. This small piece of dune habitat is extremely valuable as the final example of a community that was once more common along the Southern California coast.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution	Met	The southern dune scrub vegetation found here on the three remnant localities of the El Segundo Dunes does not occur anywhere else in the County.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	A number of organisms call the sandy, well-drained soils of the El Segundo Dunes "home," and are restricted to this coastal environment. Like the El Segundo blue butterfly, their entire life cycles are here in the dunes.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	As a result of the uniqueness of this community and of the specializations of the organisms found here, the dunes have been closely scrutinized by biologists of many disciplines.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Not Met	Much of the original three miles of dunes have been removed by development or disturbed. Scattered on the site are radio towers, roads, oil extraction equipment, and a reservoir. The vegetation is much impacted by human use, but can be restored. The designated area is the best remaining part of the original El Segundo Dunes.

In conclusion, the area is a CRA because it contains: A) core habitat for the federally-endangered El Segundo blue butterfly; B-C) beach dunes, a rare community both regionally and within the County; D) a habitat that is rare and necessary for the life cycle of the El Segundo blue butterfly and other dune insects and fauna; and E) the geographic limit of El Segundo Dunes, a rare habitat much studied by biologists.

Malibu Coastline CRA

Location

General

The Malibu Coastline Coastal Resource Area (CRA) is located in the shoreline and offshore coastal area of Malibu, which is adjacent to the Santa Monica Mountains. The CRA supports significant areas of aquatic plant and other subtidal communities, which provide habitat for a variety of fishes, birds, marine mammals, and other wildlife. Rocky outcrops intermixed with sandy spaces are found to a depth of 600 feet, and the nearshore area down to about 100 feet depth is considered the most productive and dynamic of all the marine communities outside the tropics. All of the many offshore rocks within 12 nautical miles of the coast are part of the California Coastal National Monument that is managed by the Bureau of Land Management in the U.S. Department of the Interior.

The site is located in the Triunfo Pass, Point Dume, Malibu and Topanga Quadrangles of the United States Geological Survey (USGS) 7.5 Minute Map Series (USGS, 1964).

General Boundary and Resources Description

The CRA boundary encompasses parts of the shoreline and about a 0.8 mile offshore from Malibu. The CRA stretches between the Ventura-Los Angeles County line at Leo Carillo State Beach, all the way east to Topanga State Beach. The CRA is generally adjacent to the Santa Monica Mountains SEA and Point Dume CRA. Parts of the shore are included along many of the state beaches. The sandy beaches along this CRA are the least disturbed beaches of the County, some of them completely natural. This is the remnant of the typical rock and sand shoreline that once occurred all along the coast of Southern California. From Mugu Lagoon to Latigo Point (the County portion starting at the Ventura-Los Angeles County line), is an Area of Special Biological Significance (ASBS), which is a marine area designated by the State Water Resources Control Board as having exceptionally good water quality and natural community features. Populated and disturbed areas along the shore are largely in the City of Malibu and excluded from the CRA.

This area is a relatively undisturbed coastal region where the upwelling of nutrient-rich waters and a variety of habitats support highly productive and extremely diverse marine communities. The area possesses some of the best kelp bed habitat south of Santa Barbara, and supports the only remaining natural kelp beds off the mainland coast of the County. These kelp bed areas may be one hundred times more productive than adjacent sand bottom communities, and they provide refuge, food, and nursery grounds for thousands of species.

Rocky outcrops alternate with sandy stretches along this coastline and subtidally, outcrops are found to a depth of 600 feet. The stability of the substrate and the variety of exposures provide microhabitats for a great number of organisms. Characteristically, rocky shorelines from the lower intertidal zone to about 100 foot depth can be the most biologically active areas in the world. The adjacent Point Dume CRA is one of the few places that rocky intertidal habitat occurs between Palos Verdes Peninsula and Point Mugu in Ventura County. The rocky tidepools off Point Dume, Big Rock Beach, and the promontory where Topanga Canyon Creek enters the ocean are some of the very best remaining rocky intertidal habitat in the County, and these are within the CRA. The Marine Life Protection Act designated protected area in Malibu to be the Point Dume State Marine Conservation Area (SMCA) between El Matador State Beach west of Point Dume to the west side of Point Dume, which is approximately three miles of coastline, with the conservation area extending in due north-south lines from mean high tide to about three nautical miles offshore. In the SMCA, fishing is restricted to certain species. From the west side of Point Dume to Paradise Cove on the east side is designated as the Point Dume State Marine Reserve (SMR), which has no fishing or other take allowed, and extends in due north-south lines (adjacent to the SMCA on the west) from the intertidal to offshore, which is about three nautical miles.

This coastline possesses the only undisturbed sandy beaches that remain in the County. Although very dynamic in physical stability, there is a biological, subtidal, sand-bottom community that has a great diversity of resident organisms and invertebrates ranging from bacteria through jellyfish, mollusks, and echinoderms, such as seastars, to fishes that habitually choose the sand-bottom substrate. An important micro-community of decomposers is present. Sandy beaches with their diverse invertebrate communities of interstitial organisms provide feeding areas for many bird species. In addition, the soft substrate offers a repository for eggs and nursery grounds for many species, including the grunion (*Leuresthes tenuis*) that spawns and deposits its eggs in the highest intertidal areas of the sand. This shoreline remains in essentially a native state as a remnant of what

once was typical of rock and sand shoreline in Southern California. Artificial modifications have been limited to small local areas. West of Point Dume, some minor pollution does occur, but the kelp is healthy. East of Point Dume there is minor to moderate pollution, and kelp does not grow below 35 feet.

The CRA has critical habitat for the federally-threatened western snowy plover (*Charadrius alexandrinus nivosus*) along Zuma Beach and the northwest sandy area along Point Dume. This will eventually extend along the entire west side of the headland. The western snowy plover will also have critical habitat on the seaside of the barrier berm of the Malibu Lagoon. The snowy plover has over 300 individuals using the beaches of the County for winter roosts, and there is potential for some to over-summer and breed in the County after a hiatus of many decades (Ryan Ecological Consulting, 2010).

Vegetation

The terrestrial component of this marine oriented CRA is limited to the narrow stretch of beach just above the high tide line. Sensitive plant species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

Coastal Strand Vegetation: A community that occurs in the loose sand just above the high tide line of the beach. This community is characterized by a low species diversity because few plants can tolerate the harsh conditions on this dry, sandy, saline soil of high winds, salt spray and high summer temperatures.

Corresponding MCV communities:

- *Abronia latifolia – Ambrosia* spp. (dune mat) Herbaceous Alliance
- *Cakile (edentula, maritima)* (sea rocket stands) Semi-Natural Provisional Herbaceous Alliance

Marine Resources

The Malibu coastline is a relatively undisturbed coastal region where the upwelling of nutrient-rich waters and a variety of habitats support highly productive and extremely diverse marine communities. The area possesses some of the best kelp bed habitat south of Santa Barbara, and the only remaining natural kelp beds on the mainline coast of the County. Rocky outcrops alternate with sandy stretches along this coastline and are found to a depth of 600 feet. This coastline also possesses the only undisturbed sandy beaches remaining in the County.

Surfgrass and Eelgrass Habitats: Characterized by two flowering plants that resemble grass and form dense beds on different substrates and in different conditions. Both types form highly productive habitats for unique assemblages of marine species. NOAA Fisheries and the CDFG consider surfgrass and eelgrass as valuable habitats that should be protected. Surfgrass occurs from Mean Lower Low Water (MLLW) to about 25 feet depth on rocky substrate. Locations known to support substantial surfgrass beds include rocky points and rocky subtidal areas of canyons all along the northern border of the CRA. Eelgrass grows on soft substrate and typically occurs in bays. A form of eelgrass (thought to be *Zostera pacifica)* is found on open coast sand bottom. Eelgrass is an important habitat that supports a community of diverse species from sessile to mobile invertebrates and certain fishes, such as pipefish. A subtidal eelgrass bed is in the lee of Lechuza Point between about 25 and 45 feet depth, and subtidal eelgrass may still occur off Los Alisos Canyon.

Community dominant plant:

- *Phyllospadix scouleri*, or Scouler's surf grass and *P. torrey* or Torrey's surfgrass
- *Zostera pacifica* (eelgrass)

Intertidal Zone Habitats: Consist of a variety of coastal habitats periodically covered and uncovered by waves and tides. The rocky shores support a rich assortment of plants and animals including green, brown, and red algae. A wide variety of sessile invertebrates compete for space with the plants in this habitat. Mobile invertebrates, such as crabs and snails, can be found in great abundance. Fishes are limited to tidepools, although grunion do spawn and deposit their eggs in the high tide wash areas of sandy beaches. The sandy beaches have a diverse community of interstitial invertebrates. Shorebirds actively forage during low tide in all kinds of shoreline habitats. The federally-endangered black abalone (*Haliotus cracherodii* FE) was once abundant in this habitat all along the rocky coastlines of California. Whether it still persists in the Malibu coastline area is unknown, since its current populations are reduced and much more dispersed than before.

Nearshore Subtidal Habitat: Includes those marine habitats ranging from the lower level of the intertidal zone to 99 feet. This region supports a variety of assemblages of invertebrates and fishes, and in the CRA, this habitat is frequently dominated by giant kelp. Rocky areas have a diverse community of algae (in depths of sufficient light penetration), sessile and mobile invertebrates, and fishes. Subtidal areas are even more diverse than the intertidal areas, and this great variety can be appreciated by the examples of tidepools. There are a variety of subtidal sand-adapted organisms ranging from fishes to seastars, to many kinds of jellyfish, mollusks, and other invertebrates.

Kelp Forest Habitat: Giant kelp beds are located in many places along the CRA to a depth of approximately 99 feet in the ocean. The kelp beds are part of a productive habitat that provide food, attachment sites and shelter for invertebrates and fishes. Giant kelp, the dominant alga of this community, is the fastest lengthening organism known, and it thrives in nutrient-enriched waters of upwelling. It has been "clocked" at two feet per day extension of its stipe and blades. The kelp beds are an important nursery habitat and recruitment area for juvenile fishes and invertebrates. The National Oceanographic and Atmospheric Administration (NOAA) Fisheries as well as the CDFG consider kelp beds as sensitive, and lush kelp beds such as those from the Ventura-Los Angeles County line to Malibu Point are designated as ESHA (Environmentally Sensitive Habitat Areas, Malibu Local Coastal Plan, 1986).

Community dominant plant:

- Macrocystis pyrifera (Giant kelp)

Wildlife

The terrestrial and aerial wildlife found in the CRA is dependent on the two basic regimes found there: marine and shoreline terrestrial. The shoreline beaches and rocky intertidal are home to or visited by a wide variety of shorebirds, migrating birds and marine life. The sandy beaches with their shifting sands present an unstable substrate on which organisms can establish themselves, and their resident wildlife is a set of small specialists that live in the sand interstices. An important microcommunity of decomposers exists, which feed on the materials washed up by the waves.

The Malibu Coastline cliffs, bluffs, offshore rocks and beaches offer many undisturbed habitats for roosting, feeding and nesting by numerous kinds of shore– and seabirds. Sandy beaches provide

feeding areas for many species. In addition, the soft substrate offers a repository for eggs and nursery grounds for many species.

The marine habitat has the greatest diversity of wildlife, with representatives from nearly all the phyla (major groupings of animals such as jellyfish, mollusks, echinoderms, etc.) and all parts of the food web (trophic levels) for several communities. Many of the marine phyla do not have terrestrial representatives. Some of the vertebrates, such as gray whales, and the plankton use the area as a migratory corridor. The major vegetation communities, each with its own great diversity and all trophic levels, are the benthic algae of rocky substrates, the kelp beds based on giant kelp holding onto rocky subtidal substrate and extending into the water column, and the planktonic, based on photosynthesizers that are all microscopic.

Sensitive wildlife species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section of this document.

Wildlife Movement

The CRA is on the Pacific Flyway migration route used by many birds seasonally, This shoreline plays an important role as a stopover because of its extensive undisturbed marine resources. The offshore major part of the CRA is on the annual migration route of the California gray whale (*Eschrichtius robustus*), a CITES Appendix I animal (Convention on International Trade in Endangered Species, endangered status, no trade or harvest except by strictly controlled export and import permits issued in countries that are party to the convention and have legislation of adoption, which includes the U.S.) The gray whale migrates close to shore on its transit during the winter months from the Bering Sea to lagoons of Baja California. This is migration to the Baja lagoons for calving and breeding. The whales generally return north offshore. The area may well be a migration corridor for other marine animals, as this is part of the great Southern California Bight, which has an eddy circling counterclockwise to the north off the southward flow of the California Current. This flow brings marine organisms (fishes, invertebrates, and plants) that may have major population concentrations in the south to this part of their ocean habitat. Most of these organisms have a planktonic stage that is absolutely dependent on the current system to maintain their populations and distribution. Pollution of the ocean waters by development on land will have significant effects that may not be appreciated immediately because of the cryptic nature of subtidal animals and plants.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the CRA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. There are two critical habitat areas for the western snowy plover in this CRA.

Sensitive Plan Communities and Habitats

The CRA supports no terrestrial habitat types considered sensitive by resource agencies, but the California Department of Fish and Game (CDFG) does not list intertidal or subtidal plants in its California Natural Diversity Data Base (CNDDB), 2011). NOAA Fisheries (National Oceanographic and Atmospheric Administration) as well as the CDFG do consider kelp beds as sensitive, and lush kelp beds such as those from the Ventura-Los Angeles County line to Malibu Point are designated as ESHAs by the County's Malibu Local Coastal Plan, 1986.

Kelp beds disappeared off of Palos Verdes Peninsula during the height of pollution by the White Point outfall in the mid 20th century. The Palos Verdes Peninsula's kelp beds are subsequently returning after reduction of pollution, some prodigious planting efforts, and incursion of the motile zoospores from areas like the Malibu coastline. The kelp beds are sensitive to effects like pollution and excessive sedimentation from development. They are one of the most productive communities of the world, and should be treated with care. Any development plan that might impact them, even with indirect effects, deserves scrutiny.

Sensitive Plant Species

NOAA Fisheries as well as the CDFG consider kelp beds as sensitive, and lush kelp beds, such as those from the Ventura-Los Angeles County line to Malibu Point, are designated as ESHA by the Malibu Local Coastal Plan, 1986. The principle structural component of Malibu offshore kelp beds is the giant kelp (*Macrocystis pyrifera*). NOAA Fisheries and the CDFG consider surfgrass a valuable habitat that should be protected. The principle structural component of surfgrass beds is Scouler's surf grass (*Phyllospadix scouleri*) and Torrey's surfgrass (*P. torreyi*).

Sensitive Animal Species

The western snowy plover (*Charadrius alexandrinus nivosus* [FT, CSC]*),* which feeds and resides in the wrack line areas, has designated critical habitat on Zuma Beach from Trancas Canyon to the northwestern side of Point Dume. This is proposed to expand to Point Dume. Critical habitat is also proposed to include Malibu Beach from Malibu Point to an area east of the pier, which is the seaward side of Malibu Lagoon. The Malibu Lagoon is part of the Santa Monica Mountains SEA, and the CRA is contiguous with the Santa Monica Mountains SEA at the barrier berm of the Lagoon.

The southern steelhead (*Oncorhynchus mykiss irideus* [FE, CSC]) lives in the oceanic and coastal waters for most of its life and uses the coastal streams for breeding and the first year of its young fish's lives. After one to two years in fresh water, the young fish change to smolts and make their run to the ocean, where they spend the majority of their lives. The lower Arroyo Sequit and its West Fork is designated critical habitat for the southern steelhead. This area has naturally occurring spawning beds and young fish habitat. The coastal ocean waters are within this CRA, and the linkage paths from the ocean to the coastal streams are within this CRA. The southern steelhead is known to currently use the Arroyo Sequit, Malibu Creek, and Topanga Canyon. Historically the steelhead was known from Solstice and Zuma canyons, and was probable in all the major drainages, which once had perennial water and extended to the shore in the rainy season.

The California gray whale (*Eschrichtius robustus* CITES Appendix I) uses this CRA during its calving-breeding migration cycle. The entire order of cetaceae (whales and beaked dolphins) are considered CITES Appendix I by the Australian rating system, the most stringent adoption.

The black abalone (*Haliotis cracherodii*) is a federally-endangered species and critically endangered species of the International Union for Conservation of Nature-Red List (IUCN). At one time, the black abalone was plentiful in the rocky intertidal and nearshore rocky subtidal areas in the CRA, down to

about 20 feet depth. Whether it still exists in the CRA is unknown, because its current occurrences are widely scattered and much reduced by overfishing and wasting disease.

- Black abalone (*Haliotis cracherodii*) FE
- Southern steelhead (*Oncorhynchus mykiss irideus)* FE, CSC
- Tidewater goby (*Eucyclogobius newberryi*) FE, SSC
- Western snowy plover (*Charadrius alexandrinus nivosus)* FT, CSC
- California gray whale (*Eschrichtius robustus*) CITES Appendix I

Regional Biological Value

The CRA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE MALIBU COASTLINE CRA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	California gray whale, tidewater goby, southern steelhead, western snowy plover, and black abalone, all spend critical periods of their life cycles in this CRA. Other CITES-listed marine mammals also use this CRA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	This area is a relatively undisturbed coastal region where the upwelling of nutrient-rich waters provides for highly productive and extremely diverse marine communities. The area possesses some of the best kelp bed habitat south of Santa Barbara and is recognized as ESHA by NOAA and CDFG. The Malibu coastline section from the Ventura-Los Angeles County line boundary, southeast to Latigo Point is recognized as one of the principal natural areas in the (coastal) State Water Quality Protection Area Program. It is area ASBS-24 (Area of Special Biological Significance). The CRA has critical habitat for the southern steelhead, tidewater goby, and the western snowy plover.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	This relatively undisturbed coastal region possesses some of the best kelp bed habitat south of Santa Barbara and supports the only remaining natural kelp beds off the mainland coast of the County. The kelp beds are recognized as ESHA by NOAA, CDFG, and the Malibu Local Coastal Program. It has critical habitat for the southern steelhead, tidewater goby, and the western snowy plover
D)	Habitat that at some point in the life cycle of a species or group of species, serves as	Met	This area protects the entry point of two of three of the (endangered) southern steelhead spawning streams in the County and provides connective area for the endangered tidewater goby, which breeds in the brackish-water areas of the streams of the Santa Monica Mountains. Kelpbeds are the macroforest of the ocean, and the

	Criterion	Status	Justification
	concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.		habitat and breeding and/or spawning ground for many marine animals. The sandy beaches provide feeding areas for many bird species, and the soft substrate offers a repository for eggs and nursery grounds for many species. The migration of marine species occur in this area for the California gray whale and for innumerable marine species whose plankton ride the ocean currents.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	As the main kelp bed of the County, this area is of great interest to marine scientists. It is also an edge kelp forest, separated by the long stretch of beaches of the Santa Monica Bay from the kelp beds of the Palos Verdes Peninsular area.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	This shoreline remains in essentially a native state as a remnant of what once was typical of rock and adjacent sand shoreline in Southern California. The coastline possesses the only complete, undisturbed sandy beaches remaining in the County. An important microcommunity of decomposers is present. Artificial modifications have been limited to small local areas. West of Point Dume, there is minor pollution; east of Point Dume, there is minor to moderate pollution, and kelp does not grow below 35 feet.

In conclusion, the area is a CRA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County, or regionally; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Palos Verdes Peninsula and Coastline CRA

For a description of the resources in the Palos Verdes Peninsula and Coastline CRA, please refer to the description for the Palos Verdes Peninsula and Coastline SEA above.

Point Dume CRA

Location

General

The Point Dume Coastal Resource Area (CRA) is located on the Malibu coastline and forms the northern end of Santa Monica Bay. Zuma Beach lies to the immediate northwest. Paradise Cove is just east. The CRA is important as a headland on the Pacific Flyway, for its nearby marine and its terrestrial habitats, and for critical habitat of the western snowy plover.

The CRA is located in the Point Dume United States Geological Survey (USGS) 7.5' California Quadrangle.

General Boundary and Resources Description

This headland extends into Santa Monica Bay more than a mile beyond the rest of the Malibu coast, and it is located within the Pacific Flyway. The CRA consists of the rocky coastal headland edge and six fingers extending into the interior canyons on the headland. Point Dume is a significant headland used during migration times on the Pacific Flyway. Point Dume is the southernmost habitat for coastal cliff flora such as the giant coreopsis (*Leptosyne gigantea*) and sea-lettuce (*Dudleya caespitosa)*. The CRA is contiguous with the Malibu Coastline CRA, which has notable tidepools with rich marine habitat on the eastern side of Point Dume. Southern California is known for its extensive sandy beaches, so Point Dume, which is one of very few places with rocky intertidal habitat between Palos Verdes Peninsula and the middle coastline of Ventura County, is a rare habitat in the County. The limited public access, the coastal strand vegetation, and the canyon slopes covered by Venturan coastal sage scrub, protect the resource values of this headland, both terrestrial and marine. The terrestrial and marine habitats combined make Point Dume an exceptional and unique CRA. The Marine Life Protection Act designated protected area in Malibu to be the Point Dume State Marine Conservation Area (SMCA) between El Matador State Beach west of Point Dume to the west side of Point Dume (east end of Zuma Beach), approximately a three-mile coastline. In the Conservation area, take is limited to certain designated fish and squid species for a distance of three nautical miles proceeding due north-south out from the shore. Adjacent, from the west side of Point Dume to the east side of Point Dume at Paradise Cove is designated as the Point Dume State Marine Reserve (SMR), with no take extending to three nautical miles offshore. This includes very fine tidepools on the east side.

Point Dume is one of two remaining areas in the County where a diverse and healthy mixture of terrestrial and marine habitats can be found in close association. Point Dume incorporates the terrestrial habitats: the interior canyons, the unprotected rocky shore with numerous small caves, and the sandy beach pockets; and the Malibu Coastline CRA has the marine habitats that are adjacent: outlying reefs, rocks, kelp beds, and tide pools. The tide pools off of Point Dume are some of the very best remaining in the County. Due to strong upwelling along the coast bringing in nutrient-rich waters, the nearby marine habitat is characterized by highly diverse and productive marine communities. This relative healthiness of both the terrestrial and marine habitats is largely due to limited public access, which has protected the fragile marine and shoreline ecosystems.

Coastal strand vegetation is found on sandy beaches below bluffs that rise 100 to 200 feet above the coast. Giant coreopsis (*Leptosyne gigantea)* and sea-lettuce (*Dudleya caespitosa*) are found in these communities at the southern limit of their range. Several small drainages cut through the bluffs and extend over a mile inland. The slopes are covered by Venturan coastal sage scrub. The value of these communities is increased by the unique geographic position of Point Dume. The area is an important resting and jumping-off point for migratory birds. Without the remaining terrestrial habitats, this refuge would be lost.

The CRA will have critical habitat for the federally-threatened western snowy plover (*Charadrius alexandrinus nivosus*). Currently this critical habitat goes eastward from Trancas Beach, along Zuma Beach, and extends to the northwest sandy area along Point Dume. The plovers use the west sandy habitat of the Point Dume headland, and the critical habitat will eventually extend along the entire west side of the headland into the CRA. (The western snowy plover will also have critical habitat on the seaside of the barrier berm of the Malibu Lagoon.) The snowy plover has over 300 individuals

using the beaches of the County for winter roosts, and there is potential for some to over-summer and breed in the County after a hiatus of many decades (Ryan Ecological Consulting, 2010).

Vegetation

Vegetation within the CRA is comprised of several community types. Coastal strand vegetation occurs along the immediate shore and on the cliffs and bluffs, overlooking the ocean coastal dune, and bluff scrub also can be found. In the ravines and upper slopes examples of Venturan coastal sage scrub intergrade with maritime succulent scrub. This is a type of coastal sage scrub, defined by the unusual giant coreopsis, which is found in some of the less disturbed areas of the CRA. Sensitive plant species and plant communities occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

Coastal Strand Vegetation: A community that occurs in the loose sand just above the high-tide line of the coast. This community is characterized by low species diversity because few plants can tolerate the harsh conditions on this dry, sandy, saline soil of high winds, salt spray and high summer temperatures.

Corresponding MCV communities:

- *Abronia latifolia – Ambrosia* spp. (dune mat) Herbaceous Alliance
- *Cakile (edentula, maritima)* (sea rocket stands) Semi-Natural Provisional Herbaceous Alliance

Coastal Bluff and Dune Scrub: Found on the cliffs and bluffs overlooking the ocean. This community formerly was found in many places along the coast, but is now restricted to a few locations. The system consists of fine, sandy soil that dries rapidly. Plants typical of the dune scrub include dune buckwheat, rattle-pod, bladderpod, deer weed, sawtooth goldenbush, and California sunflower.

Corresponding MCV communities:

- *Baccharis pilularis* (coyote brush scrub) Shrubland Alliance
- *Lupinus arboreus* (yellow bush lupine scrub) Shrubland Alliance and Semi-Natural Shrubland Stands
- *Lupinus chamissonis-Ericameria ericoides* (silver dune lupine–mock heather scrub) Shrubland Alliance

Venturan Coastal Sage Scrub: Characterized by the summer drought-deciduous vegetation found near the Southern California coast south of Ventura. It has low, mostly soft-woody shrubs with bare ground underneath and between shrubs. This community is dominated by California sagebrush, California buckwheat, black sage, purple sage, and California encelia.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Artemisia californica-Salvia mellifera* (California sagebrush-black sage scrub) Shrubland Alliance

- *Artemisia californica-Eriogonum fasciculatum* (California sagebrush-California buckwheat scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Salvia apiana* (white sage scrub)Shrubland Alliance
- *Salvia leucophylla* (purple sage scrub) Shrubland Alliance
- *Salvia mellifera* (black sage scrub) Shrubland Alliance
- *Eriogonum fasciculatum* (California buckwheat scrub) Shrubland Alliance
- *Hazardia squarrosa* (sawtooth golden bush scrub) Shrubland Alliance
- *Lotus scoparius* ([*Acmispon glaber*] deer weed scrub) Shrubland Alliance
- *Lupinus albifrons* (silver-bush lupine scrub) Shrubland Alliance
- *Malacothamnus fasciculatus* (bush mallow scrub) Shrubland Alliance

Maritime Succulent Scrub: A form of coastal sage scrub with many members of that community, as well as one or more endemic succulent evergreen species. Examples of this can be found throughout the CRA.

Corresponding MCV communities:

- *Leptosyne gigantea* (giant coreopsis scrub) Shrubland Alliance
- *Opuntia littoralis* (coast prickly-pear scrub) Shrubland Alliance
- *Lycium californicum* (desert thorn scrub) Provisional Shrubland Alliance

Marine Resources

The Malibu coastline is a relatively undisturbed coastal region where upwelling of nutrient-rich waters and a variety of habitats support highly productive and extremely diverse marine communities. The terrestrial habitat (here the Point Dume headland) and the marine habitats are integrally tied to one another. Disruption in one will impact the other. The marine habitats feed the seabirds that use the headland, and marine organisms, such as the grunion (fish, *Leuresthes tenuis)* use the sandy shore for spawning. The headland protects the nearshore habitats and controls and filters runoff so that the offshore habitats remain clean and have the terrestrial input of nutrients for which they are adapted. The nearby areas in the Malibu Coastline CRA possesses some of the best kelp bed habitat south of Santa Barbara, and the only remaining natural kelp beds on the mainland coast of the County. Rocky outcrops alternate with sandy stretches along this coastline and are found to a depth of 600 feet. The Point Dume headland typifies the alternating sand and rock on several scales. The Malibu coastline possesses the only complete, undisturbed sandy beaches remaining in the County. The west side of the headland has critical habitat for the snowy plover.

Intertidal Zone Habitats: Consist of a variety of coastal habitats that are periodically covered and uncovered by waves and tides. The rocky shores support a rich assortment of plants and animals

including green, brown, and red algae. A wide variety of sessile invertebrates compete for space with the plants in this habitat. Mobile invertebrates, such as crabs and snails, can be found in great abundance. Fishes are chiefly limited to tidepools during high tide. (Grunion spawn on the high-tide areas of the sandy beach.) There is a community of small and microscopic organisms adapted to the interstices of the sand grains of the beach. Shorebirds actively forage in both rocky and sand areas during low tide. The rocky tidepools adjacent to the CRA on its east side are some of the finest remaining in the County. They are in the Malibu Coastline CRA and the Point Dume State Marine Reserve—no take of any kind is permitted.

Nearshore Subtidal Habitat: The Malibu Coastline CRA has many interactions with the biota of the CRA. Marine habitats include the rocky substrate of the lower level of the intertidal zone on the east side of Point Dume, to subtidal rocky areas that support a great diversity of invertebrates and fishes. Near the CRA this habitat is frequently dominated by giant kelp. The sandy offshore habitat on the west side of Point Dume has a wonderful variety of sand-adapted organisms, ranging from fishes to seastars, to many kinds of jellyfish, mollusks, and other invertebrates.

Kelp Forest Habitat: Giant kelp beds are located down to a depth of approximately 99 feet in the ocean surrounding Point Dume in the Malibu Coastline CRA. The kelp beds are part of one of the temperate zone's most productive habitats, by providing food, attachment sites and shelter for invertebrates and fishes. It is a supremely important nursery and recruitment habitat for juvenile fishes and invertebrates, and an important feeding area for seabirds that use Point Dume for roosting.

Wildlife

The wildlife found in the CRA is dependent upon the two basic regimes found there: marine and terrestrial. The shoreline and bluffs overlooking the coastal sections are home to or visited by a wide variety of shorebirds, migrating birds and marine life. The interior grasslands and ravines have a very different assemblage than other nearby coastal areas. The CRA ravines are separate and isolated from one another. They exhibit a reduced number of animal species than otherwise might be expected and probably suffer from the effects of fragmentation of a larger, more contiguous ecosystem.

Point Dume is a peninsula that projects its rocky cliff sides out into the Pacific Ocean relative to low bluffs and beaches to the east and west that are heavily impacted by human activity. Point Dume offers a variety of undisturbed habitats for marine and shorebirds. These cliffs and offshore rocks offer ideal roosting and feeding sites for numerous shorebirds, gulls, and other seabirds.

All wildlife species previously recorded, as well as those expected to occur, within the CRA are indicated in the *Comprehensive Floral & Faunal Compendium* of the *Los Angeles County SEA Update Study 2000 Background Report*. Sensitive wildlife species occurring or potentially occurring within the CRA are discussed in the Sensitive Biological Resources section.

Wildlife Movement

The CRA is on the Pacific Flyway migration route used by many birds seasonally. It plays an important role as a stopover because of its extensive undisturbed marine resources. Point Dume does not fall within any identified terrestrial movement routes for wildlife because it is isolated by the ocean on one side, and miles of developed land on the remaining sides.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the CRA, which have been accorded special recognition. When species are federally-listed as endangered or threatened, they often have federally-designated, geographically-specific "critical habitat areas." Critical habitat areas, after extensive study by experts, are judged to be essential to conservation and maintenance of the species. The CRA has proposed critical habitat for the federally-threatened western snowy plover.

Sensitive Plan Communities and Habitats

The CRA supports several habitat types considered sensitive by resource agencies. These are inventoried by California Department of Fish and Game (CDFG) in the California Natural Diversity Database (CNDDB) [2011]. The CNDDB includes state and federally-listed endangered, threatened, and rare vascular plants, as well as several sensitive vertebrate species. These communities include coastal sage chaparral scrub and maritime succulent scrub, which occur throughout the CRA. These communities, or closely related designations, are considered high priority communities by the CDFG, which indicates that they are experiencing a decline throughout their range. The array and composition of these communities has been discussed in the Vegetation section.

Sensitive Plant Species

The following special-status plant taxa have been reported or have the potential to occur within the CRA, based on known habitat requirements and geographic range information:

- Malibu baccharis (*Baccharis malibuensis*) RPR 1B.2
- Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
- Slender mariposa lily (*Calochortus clavatus* var*. gracilis*) RPR 1B.1
- Plummer's mariposa lily (*Calochortus plummerae*) RPR 1B.2
- Parry's spineflower (*Chorizanthe parryi* var*. parryi*) RPR 1B.1
- Blochman's dudleya (*Dudleya blochmaniae* ssp. *blochmaniae*) RPR 1B.1
- Agoura Hills dudleya (*Dudleya cymosa* ssp*. agourensis*) FT, CSC, RPR 1B.2
- Marcescent dudleya (*Dudleya cymosa* ssp*. marcescens*) FT, SR, RPR 1B.2
- Lyon's pentachaeta (*Pentachaeta lyonii*) FE, SE, RPR 1B.1
- Sonoran maiden fern (*Thelypteris puberula* var*. sonorensis*) RPR 2.2

Sensitive Animal Species

The following special-status animal species are reported or are likely to be present within the CRA based on habitat requirements and known range attributes:

- Coast horned lizard (*Phrynosoma blainvillii*) CSC
- Two-striped garter snake (*Thamnophis hammondii*) CSC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, CSC

Regional Biological Value

The CRA meets all SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE POINT DUME CRA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	This CRA includes habitat that is used by the western snowy plover (*Charadrius alexandrinus nivosus).* The west side of the headland includes federally-designated critical habitat that will expand into the CRA.
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The CRA has coastal bluff vegetation on 100-200 feet cliffs, and on the sandy beaches below, is good coastal strand vegetation and habitat. The southern limit of the range for two plants characteristic of the bluffs to the north, giant coreopsis and sea-lettuce is on Point Dume. On the east side of Point Dume, the Malibu Coastline CRA has an excellent rocky intertidal area, which is a habitat that is no longer common in Southern California.
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	Point Dume is one of the two remaining areas in the County where a diverse and healthy mixture of terrestrial Venturan coastal sage scrub and coastal strand vegetation are in close association with marine habitats. Its marine habitats consist of an unprotected rocky shore, with sandy beach pockets, and numerous small caves. The contiguous Malibu Coastline CRA has outlying reefs, rocks, and kelp beds. Due to strong upwelling along the coast, the waters are nutrient–rich and foster highly diverse and productive marine communities, which are protected somewhat by limited public access on the Point Dume headland.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	The headland of Point Dume extends into Santa Monica Bay more than a mile beyond the rest of the Malibu coast, and it is located within the Pacific Flyway. As a result, the area is an important jumping off point for migratory birds. Without the remaining terrestrial habitats, this refuge would be lost.

Criterion		Status	Justification
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The close association of native terrestrial vegetation and diverse marine habitats enriched by the nutrient upwelling make the Point Dume area scientifically important for the County. The southern-most point for giant coreopsis and sea lettuce are extreme points for vegetation that are more common to the north.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Met	Relative to other coastal areas, the terrestrial vegetation communities at Point Dume are in good condition, in spite of some degradation from increased runoff and human usage. The marine flora and fauna are in excellent condition, and the association is important to conservation of the County's biodiversity.

In conclusion, the area is a CRA because it contains: A) core habitat of the western snowy plover, a federally-threatened species, B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are restricted in distribution in the County and also regionally restricted; D) concentrated breeding, feeding, resting, or migrating grounds, which are limited in availability in the County; E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community; and F) areas that provide for the preservation of relatively undisturbed examples of original natural biotic communities in the County.

Santa Catalina Island CRA

For a description of the resources in the Santa Catalina Islands CRA, please refer to the description of Santa Catalina Island in Section V below.

Santa Monica Mountains CRA

For a description of the resources in the Santa Monica Mountains CRA, please refer to the description for the Santa Monica Mountains SEA above.

Terminal Island (Pier 400) CRA

Location

General

The Terminal Island (Pier 400) Coastal Resource Area (CRA) is located in the southernmost part of the County within the Port of Los Angeles. Terminal Island (Pier 400) supports one of the few remaining areas for breeding utilized by the endangered least terns. The CRA is an artificial dredge spoil island located generally in San Pedro Bay within the Port of Los Angeles. Pier 400 is in the outer harbor area, and the least tern nesting area is on the southern end. It is protected from future development per inter-agency agreement among the Port of Los Angeles, U.S. Fish and Wildlife Service, California Department of Fish and Game, and the U.S. Army Corps of Engineers. The area was specifically designed for least tern nesting and is maintained with buffer from the surrounding Port

development, close range to foraging areas, and clearing of the flat sandy area to have little vegetation. During the nesting season (April-August) the site is designated as a no-trespassing area. When least terns nest outside the designated boundaries, a buffer is established for the nest(s) until the chicks are fledged. At other times, the Port may use the site for temporary purposes as long as it is restored prior to the following nesting season. The CRA corresponds directly to the California Audubon-designated Globally Important Bird Area (IBA), Pier 400 Tern Colony IBA.

The site is located in the Long Beach and San Pedro Quadrangles of the United States Geological Survey (USGS) 7.5 Minute Map Series (USGS, 1964).

General Boundary and Resources Description

The CRA is not on a natural island. It is an approximately 15-acre fenced area on the south end of Pier 400, part of Terminal Island, in the Los Angeles Harbor. The area is maintained, prepared, and monitored annually by the Port of Los Angeles for the least tern. The nesting site was created, along with the entire Pier 400 peninsula, of material dredged from the Los Angeles Harbor from 1995-2003. The substrate consists of sand with small rocks and many shell pieces. Non-native flora colonize the area every year. Every year before the breeding period, the Port of Los Angeles has the plants surveyed and then cleared to prepare the terrain for what least terns prefer—a flat sandy area that is virtually free of vegetation that the terns can scrape to provide a shallow depression for their eggs. The northern part of Pier 400 is now a shipping container terminal. There is an undeveloped area, covered with low, volunteer vegetation, west of the CRA that may someday be used by the Port. The CRA site has been used by the least tern for nesting since it was created in 1997. The CRA and the adjacent field on the west are separated and protected from Port activity by a chainlink fence with locked gate. In addition, the CRA has a peripheral chick fence to keep the chicks from wandering off the CRA area.

Vegetation

The vegetation in this CRA was removed in 2003 and 2004 to allow additional nesting area for the least tern. The common species seen include sea rocket (*Cakile maritima*), tree tobacco (*Nicotiana glauca*), Bermuda grass (*Cynodon dactylon*), puncture vine (*Tribulus terrestris*), and sow thistle (*Sonchus oleraceus*). This removal was judged a success, and clearing has been continued in recent years. Sensitive plant communities have not been found on the site.

Wildlife

Wildlife diversity and abundance within the CRA is limited by its remote location, only accessible by terrestrial animals after traversing long distances through industrial facilities and the narrow, paved causeway of access. Feral cats, rats and mice, and birds associated with development in the region, such as gulls, crows, rock doves, house finches, house sparrows and mockingbirds have been recorded in the area. Native herons that could prey upon the least tern chicks have been observed in the area. The site was also used for breeding in 2011 by two other species that prefer bare, scraped areas: black skimmers (*Rynchops niger*) and Caspian terns (*Hydroprogne caspia*). Many types of shore birds are found nearby.

Wildlife Movement

The site is a low quality habitat for terrestrial animal foraging, and it does not lie within any identified terrestrial movement routes for wildlife. However, it is well located as a linkage site for migratory waterfowl and some birds, specifically the least tern. Surrounding bay waters on three sides provide

suitable area for the least tern foraging. The principle prey items they seek are small, schooling fish that frequent the surface area of bay and estuarine waters.

Sensitive Biological Resources

Sensitive biological resources are habitats or individual species that have special recognition by federal, state, or local conservation agencies and organizations as endangered, threatened, and/or rare. This is due to the species' declining or limited population sizes, which usually results from habitat loss. Watch lists of such resources are maintained by the California Department of Fish and Game (CDFG), the United States Fish and Wildlife Service (USFWS), and special groups, such as the California Native Plant Society (CNPS). The following sections indicate the habitats as well as plant and animal species present, or potentially present within the CRA, which have been accorded special recognition.

The site of this CRA is entirely artificial, but it provides the least terns the ideal kind of substrate they prefer: a flat sandy area, devoid of vegetation, that they can scrape for a nesting depression. Artificially created sites (inadvertently created by development) are frequently chosen for breeding by least terns. The site has been used by the least tern for nesting since it was created in 1997 and has been continually managed for this use.

Sensitive Plan Communities and Habitats

The CRA supports no habitat types considered sensitive by resource agencies, namely the CDFG California Natural Diversity Data Base (CNDDB) [2011].

Sensitive Plant Species

No sensitive plants are expected to occur within this CRA.

Sensitive Animal Species

The California least tern (*Sternula antillarum browni*) is both state and federally-endangered. It nests in the CRA and forages in shallow water near the nest site. The western snowy plover (*Charadrius alexandrus nivosus*) is listed as a federally-threatened species and California species of concern, and migrants have been seen but have not nested. Black skimmers ([F-BCC, CA-SSC]) used the site for nesting in the 2011 season.

Regional Biological Value

The CRA meets several SEA designation criteria and supports many regional biological values. Each criterion and how it is met is described below.

CRITERIA ANALYSIS OF THE TERMINAL ISLAND (PIER 400) CRA

Criterion		Status	Justification
A)	The habitat of core populations of endangered or threatened plant or animal species.	Met	This area was set aside because endangered least terns use it for breeding in the summer. Their breeding depends on availability of forage fish, and they may not use the area consistently. In addition

Criterion		Status	Justification
			there may be some breeding by the black skimmer (bird of concern for the State and USFWS).
B)	On a regional basis, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	This area was set aside because endangered least terns use it for breeding in the summer. Their breeding depends on availability of forage fish, and they may not use the area consistently. In addition there may be some breeding by the black skimmer (bird of concern for the State and USFWS).
C)	Within the County, biotic communities, vegetative associations, and habitat of plant or animal species that are either unique or are restricted in distribution.	Met	The least tern typically breeds in flat sandy areas that are created by disturbance, but are free of disturbance and vegetation during the breeding period. The area needs to be close to a source of the terns' prey, which are small, estuarine or surface-schooling marine fishes. The choice breeding areas require no disturbance because the terns make an unsheltered scoop for a nest, and eggs and nestlings would be crushed by constant traffic of vehicles or pedestrians. This kind of habitat was once common along the beaches of Southern California, but has nearly disappeared as estuaries have been filled and channelized, and sandy beaches have become a favorite Southern California recreation area.
D)	Habitat that at some point in the life cycle of a species or group of species, serves as concentrated breeding, feeding, resting, or migrating grounds and is limited in availability either regionally or in the County.	Met	Los Angeles has many fine beaches that are potential nesting sites, but nearly all have become recreation areas. The terns have continued to use the areas with protection from disturbance, which are a small number compared to the previously available undisturbed sites.
E)	Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.	Met	The Terminal Island site is named as a CRA for the summer bird breeding that occurs.
F)	Areas that would provide for the preservation of relatively undisturbed examples of the original natural biotic communities in the County.	Not Met	Due to the artificial construct of the area, the CRA does not serve as a relatively undisturbed example of the original natural biotic communities in the County.

In conclusion, the area is a CRA because it contains: A) the habitat of core populations of endangered and threatened plant and animal species; B-C) biotic communities, vegetative associations, and habitat of plant and animal species that are either unique or are restricted in distribution in the County and regionally; D) concentrated breeding, feeding, resting, or migrating

grounds, which are limited in availability in the County; and E) biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent unusual variation in a population or community.

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V. Coastal Zone Resources

Coastal Zone Resources include natural resources in the the County's coastal areas, which are neither SEAs nor CRAs, and areas that contain SEAs or CRAs but are larger than one single SEA or CRA.

Ballona Wetlands

For a description of the resources in the Ballona Wetlands, please refer to the description for the Marina Del Rey below, and the description for the Ballona Wetlands Significant Ecological Area (SEA) in Section IV.

Marina Del Rey[4]

Marina Del Rey is a man-made feature that occupies part of the historical estuary near the mouth of Ballona Creek. Prior to the arrival of Europeans, the Ballona area was an ancient estuary of the Los Angeles River, with the mouth of the river entering the Pacific Ocean north of the Westchester Bluffs, forming a broad coastal plain with seasonal and permanent wetlands extending north and east toward higher ground in present-day Santa Monica[5]. A long range of natural sand dunes cut off the ocean from the majority of the low-lying ground, which featured a network of tidal channels and extensive salt marsh (i.e., the historical "Venice Marshes" or "Ballona Wetlands"). Until a flood in the early 1800s, the Los Angeles River emptied at Santa Monica Bay, along the current course of Ballona Creek.[6] The historical landscape along the coast west of present-day Lincoln Boulevard (i.e., an area encompassing all of Marina Del Rey) likely consisted of wide tidal channels and mudflats, salt marshes, coastal dunes, pockets of freshwater and/or brackish marsh, as well as riparian scrub. Also present was a coastal prairie community described by researchers as far back as the 1930s

[4] Adapted from Hamilton, RA and Cooper, DS, 2010. Conservation and Management Plan for Marina Del Rey, Los Angeles County, California. Prepared for the County Los Angeles Department of Beaches and Harbors and the Department of Regional Planning.

[5] Cooper, D. S. 2008. The use of historical data in the restoration of the avifauna of the Ballona Wetlands, Los Angeles County, California. Natural Areas Journal 28:83–90.

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(e.g., "the meadow" referred to by von Bloeker 1943[7]). These are generally the habitat types typical of coastal estuaries throughout Southern California and northwestern Baja California, Mexico.[8] Comparable coastal estuaries on broad plains in Southern California include Carpinteria Marsh, Mugu Lagoon, Alamitos Bay, Bolsa Chica, Upper Newport Bay, and the Tijuana River Estuary.

By the mid-1900s, much of Ballona Creek had been excavated and routed through a channel, at first earthen (1920s), then concrete-lined (late 1930s), principally to control floods in the Ballona Valley that regularly destroyed cropland and generally hindered development. The most serious and final impact to lower Ballona Creek and the majority of its natural wetlands came in the early 1960s, with the completion of Marina Del Rey, which eliminated nearly all the functional wetlands north of the Ballona Creek channel and left only a small remnant to the south, along Culver Boulevard. However, just as the creation of Marina Del Rey development entailed the elimination of certain natural habitats, it created novel ones, with the addition of hundreds of evergreen, semi-tropical, trees, as well as irrigated lawns and man-made structures.

Today the channel waters of Marina Del Rey and its breakwater are designated by California Audubon as a part of the Ballona Wetlands State Important Bird Area (IBA), recognizing the important natural resources that still occur in this district of the County. The IBA includes the Ballona Lagoon in nearby Venice, the Del Rey Lagoon across Ballona Creek in Playa Del Rey, the least tern nesting area on Venice City Beach, the Strand Beach south of the Ballona Channel opening, the Ballona Channel, the Ballona Wetlands both north and south of the Ballona Channel, and Bluff Creek that feeds the Ballona Freshwater Marsh. The IBA designation recognizes this as a unit, all the parts contributing to the welfare of the whole. As an example, the federally-endangered least terns that breed on Venice City Beach need to forage widely, in all parts of the IBA waters and beyond in order to successfully raise their young to fledglings.

Vegetation

Vegetation of the Marina Del Rey has not been formally described; however, the Conservation & Management Plan for Marina Del Rey, Los Angeles County, California (Hamilton and Cooper, 2010.) discusses six areas within Marina Del Rey with regard to their value as avian resource areas. Because no vegetation map has been prepared for the Marina, these areas are listed individually below, along with any corresponding natural or Semi-Natural vegetation types that are to be expected within each of the six areas.

Oxford Stormwater Retention Basin**:** Provides a flood-control function for the development and is lined with native and non-native species. The shoreline of the basin has been landscaped extensively with non-native trees and shrubs, especially small-flowered myoporum (*Myoporum laetum*). The myoporum landscaping currently in poor health, presumably due to an infestation of the

[7] von Bloeker, J. C. 1943. The fauna and flora of the El Segundo sand dunes: Birds of El Segundo and Playa del Rey. Bulletin of the Southern California Academy of Sciences 42:1–30 (Part 1) and 90–103 (Part 2).

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myoporum thrip (*Klambothrips myopori*).

Corresponding MCV communities:

- *Schinus* (*molle*, *terebinthifolius*)-*Myoporum laetum* (Pepper tree or Myoporum groves) Semi-Natural Woodland Stands

- *Eucalyptus* (*globulus*, *camaldulensis*) (Eucalyptus groves) Semi-Natural Woodland Stands

Ballona Lagoon: The northern extent of the former coastal lagoon at the mouth of the Ballona Wetlands, and now the southern extension of the "Grand Canal" in Venice (adjacent to and just west of Marina Del Rey), this site has been known as "Ballona Lagoon" since 1996 when extensive habitat restoration was completed in an effort to bring back a native coastal scrub community. The lagoon is tidal, and a band of mudflat is usually exposed around the entire lagoon, but only the upper/northern end drains completely except during the most extreme low tides. Saltmarsh vegetation forms a ring around the upper mudflat, below the coastal scrub.

Corresonding MCV communities

- *Schinus* (*molle*, *terebinthifolius*)-*Myoporum laetum* (pepper tree or myoporum groves) Semi-Natural Woodland Stands

- *Carpobrotus edulis* or other ice plants (ice plant mats) Semi-Natural Herbaceous Stands

- *Sarcocornia pacifica* (*Salicornia depressa*) (pickleweed mats) Herbaceous Alliance

- Orcutt's pincushion (*Chaenactis glabriuscula* var. *orcuttiana*) new Alliance

Del Rey Lagoon: This area is entirely landscaped with lawn and ornamental non-native *Ficus* and *Acacia* trees.

Corresonding MCV communities: None at this time.

Ballona Wetlands: This, the main tidal marsh area remaining at Ballona, is located between the Ballona Creek channel and Culver Boulevard. It features extensive pickleweed (*Salicornia* spp.) marsh habitat, muddy tidal channels, and a large saltpan that is irregularly moistened by rain, dense fog, and high tides.

Corresonding MCV communities

- *Sarcocornia pacifica* (*Salicornia depressa*) (pickleweed mats) Herbaceous Alliance

Ballona Freshwater Marsh: This marsh, constructed in 2003 at the corner of Lincoln and Jefferson Boulevards, just south of Marina Del Rey, supports large expanses of tules, cattails, and other freshwater marsh vegetation.

Corresonding MCV communities

- *Schoenoplectus acutus* (hardstem bulrush marsh) Herbaceous Alliance

- *Schoenoplectus californicus* (California bulrush marsh) Herbaceous Alliance

- *Typha* (*angustifolia*, *domingensis*, *latifolia*) (cattail marshes) Herbaceous Alliance

Centinela Confluence: This refers to the tidally-influenced confluence of Ballona Creek at the Centinela Channel, just south of the State Route-90 bridge. A patch of tall, lush grasses serves as a consistent roosting and foraging location for herons, egrets, brown pelicans, gulls, terns, and shorebirds.

Corresonding MCV communities: None at this time.

Wildlife

As reviewed by Cooper[9], many bird species associated with freshwater marsh, coastal lagoon, and riparian habitats were lost from the Ballona area during the early period of development (pre-1930s); many saltmarsh species, including waterfowl and shorebirds that occurred in large flocks, suffered heavy losses during the middle period (1940s to 1960s); and since the 1960s, many open-country species, particularly those of agricultural fields and extensive grasslands, have either been extirpated or experienced serious declines.

Cooper (2006[10]) documented the ongoing colonization of the local area by bird species that require tall trees for breeding and/or foraging, and by species frequently associated with human habitation. This colonization phenomenon has intensified as the Marina's non-native landscaping has matured, providing much more structural complexity than was present formerly, but at the expense of numerous species that depend on natural, wild habitats for their persistence in the landscape or for refueling during long migrations. Currently, the area is used extensively by nesting and foraging great blue heron (*Ardea herodias*), great egret (*A. alba*), snowy egret (*Egretta thula*), black-crowned night heron (*Nycticorax nycticorax*), and double-crested cormorant (*Phalacrocorax auritus*).

A well-documented least tern colony (federally and state-listed Endangered) is present nearby at Venice Beach and is known to have suffered predation by crows and black-crowned night herons, both of which are dependent on non-native landscaping and artificial structures within and surrounding Marina Del Rey for nesting substrate.

Sensitive Biological Resources

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank (RPR) is indicated by the ranks 1A (presumed

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[9] Cooper, D. S. 2008. The use of historical data in the restoration of the avifauna of the Ballona Wetlands, Los Angeles County, California. Natural Areas Journal 28:83–90.

[10] Cooper, D. S. 2006. Annotated checklist of extirpated, reestablished, and newly-colonized avian taxa of the Ballona Valley, Los Angeles County, California. Bulletin of the Southern California Academy of Sciences 105:91–112.

extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur within the SEA, based on known habitat requirements and geographic range information:

- Southern tarplant (Centromadia parryi ssp. australis) RPR 1B.1
- Orcutt's pincushion (Chaenactis glabriuscula var. orcuttiana) RPR 1B.1
- Coastal goosefoot (Chenopodium littoreum) RPR 1B.2
- Coulter's goldfields (Lasthenia glabrata ssp. coulteri) RPR 1B.1
- Ballona cinquefoil (Potentilla multijuga) RPR 1A
- Estuary seablite (Suaeda esteroa) RPR 1B.2

The following special-status animal species are reported or are likely to be present within the SEA based on habitat requirements and known range attributes:

- Mimic tryonia (*Tryonia imitator*) CDFG Special Animals List
- Wandering skipper (*Panoquina errans*) CDFG Special Animals List
- Silvery legless lizard (*Anniella pulchra pulchra*) FSS, SSC
- Two-striped garter snake (*Thamnophis hammondii*) BLMS, FSS, SSC
- Tricolored blackbird (*Agelaius tricolor*) BCC, BLMS, SSC, USBC, AWL, ABC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, BCC, SSC, ABC, AWL, USBC
- California black rail (*Laterallus jamaicensis coturniculus*) BCC, ST, CDFG Fully Protected, USBC, AWL, ABC
- Belding's savannah sparrow (*Passerculus sandwichensis beldingi*) SE
- California least tern (*Sternula antillarum browni*) FE, SE, CDFG Fully Protected, USBC, ABC
- South coast marsh vole (*Microtus californicus stephensi*) SSC
- Southern California saltmarsh shrew (*Sorex ornatus salicornicus*) SSC

San Clemente Island

San Clemente Island lies approximately 63 miles south of the City of Long Beach and 78 miles west of the City of San Diego. San Clemente Island is approximately 24 miles long and 5 miles across at

its widest point. It has a land area of approximately 57 square miles. Since 1934, San Clemente Island has been owned and operated by the U.S. Navy. More than a dozen range and operational areas are clustered within a 60 mile radius of San Clemente Island. The Commander-in-Chief, Naval Forces, Pacific (CINCPACFLT) is the major claimant for San Clemente Island, and the Naval Air Station, North Island (NASNI) is responsible for its administration.

The climate of the Island is classified as semi-arid, which is similar to the Southern California coastal areas, except for more fog and overcast weather and cooler year-round temperatures. Aided by the Santa Ana winds, temperatures exceeding 90 degrees occasionally occur between August and October. Rainfall is slight and occurs mostly between the months of November and April (San Clemente Island Master Plan).

The Island is a very important biological resource for the County, California, and the U.S. Any island is a microcosm of evolutionary processes, and studies of island biota lead to many insights on biological community processes—how food webs are structured and how to maintain them in the context of impacts. The Island has 14 endemic plants (known only from the Island; 6 of which are federally-endangered) and 29 other plants known only from the Island and other Channel Islands (the northern ones and Santa Catalina Island). Some of the Island's endemics have their closest relatives on islands off of Baja California, which is over 500 miles away, and not the nearest neighboring islands. The plants had a major setback with about 400 years of goat and pig grazing, but the Navy has finally removed the last of these (a goat in 1992), and plants have responded vigorously to predation relief in most cases.

There is multiple federal recognition of the Island's resources. The Island has endemic birds, notably the federally-endangered shrike (*Lanius ludovicianus mearnsi*) and the federally-threatened San Clemente sage sparrow (*Amphispiza belli clementeae*). The shrike crashed to a population of 14 birds in 1998, but with a Navy recovery program of incubating eggs, the shrikes have rebounded to about 200 individuals. The chief predators were or are the introduced black rat and feral cats, but the goats did major indirect damage by undermining and browsing the trees that the shrike needs to breed. The Island has an endemic federally-threatened Island night lizard (*Xantusia riversiana*), and a subspecies of the island fox (*Urocyon littoralis clementae*) that is state-threatened and monitored by the Navy. Although it does not include offshore reefs, rocks, and pinnacles under the jurisdiction of the armed forces, the California Coastal National Monument, under the Bureau of Land Management in the U.S. Department of the Interior, manages the rocks within one nautical mile of the coast of the Island under this program.

State recognition has been equally strong. The Island has many state-recognized sensitive species. The Island is designated by the California State Water Resources Control Board as an ASBS (Area of Special Biological Significance), which is a marine area with exceptionally good water quality and natural community features. Populated and disturbed areas along the shore are zones of exception, and there is one small designated area at the sewage outfall out of 100 natural gullies and ephemeral streams and 23 known Navy discharges. The Island is reputedly a favorite of snorkelers and divers for the marine life, and its waters are on the main migration path for the CITES Appendix I California gray whale (*Eschrichtius robustus*).

The Island and its nearshore out to about 0.8 mile offshore is designated by California Audubon as the San Clemente Island Globally Important Bird Area (IBA). Over 240 bird species regularly use the Island, and about 30 species inhabit the Island year-round.

The Island has unique features that are mysterious in some respects—phenomena waiting for

discovery. The Island is nearly surrounded by sea cliffs, which in their steepness, provide the protection from predators (including introduced rats) that seabirds need for breeding. It is probable that some breeding by marine birds is unknown, since they often forage and return to feed their offspring at night, which is a difficult phenomenon to observe for predators and humans alike. Colonies are yet to be discovered. A known marine bird that has this breeding pattern is the federal candidate for listing, Xantus' murrelet (*Synthliboramphus hypoleucus*). Because it is so distant from shore, this Island has many oceanic influences that are unique for the Channel Islands—much more than the other nearby islands. For example, an oceanic bird, the red-tailed tropic bird (*Phaethon rubricauda*), once had some breeding on Pyramid Head before this area became part of the shore bombardment range. The Ashy storm-petrel (*Oceanodroma homochroa*), which is a state species of concern and one of the rarest storm-petrels, is known to breed in the Seal Cove area, and could also be breeding elsewhere on the Island.

Vegetation

Despite the Island's barren look, a large variety of plant life is present. The Island harbors 14 endemic plants and 29 insular endemic plants restricted to the Channel Island system (San Clemente Island Master Plan).

Domestic animals introduced to the Island, including cats, pigs, and goats, have greatly impacted the native plant communities. Beginning in 1875, the introduction of Spanish goats drastically altered the ecological structure of the Island due to constant foraging and grazing. Native plants and animals were significantly reduced, which resulted in an effort to remove the goats from the Island. By 1992, the U.S. Fish and Wildlife Service removed all goats and pigs from the Island (USFWS, California Channel Islands Species Recovery Plan).

Plant communities on the Island were classified using standard methodology and terminology. Most of the communities discussed correspond directly with those listed in Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986 and 1992 update). Other communities are named based on dominant species within them and/or commonly used terminology. Descriptions and general locations of each plant community on the Island, including maritime desert scrub, maritime sage scrub, island woodland, grassland, coastal salt marsh, and disturbed areas are given below.

In recent years, ecologists have refined previous vegetation classification approaches to define communities primarily by their constituent plant assemblages, and have now widely adopted the classification system described by Sawyer, Keeler-Wolf and Evens in A Manual of California Vegetation, Second Edition 2009 (MCV). This has become the accepted standard recognized by the California Department of Fish and Game, the California Native Plant Society and the U.S. Fish and Wildlife Service.

The important difference between current and earlier methods is that earlier classifications were based on a variety of factors, such as physiographic features, as in the case of vernal pools; or by specific plants, as in the case of coast live oak woodland; or by the use of commonly accepted terms, as in chaparral. In the MCV, plant communities are defined with more precision as botanical alliances where one, or occasionally two, plant species are dominant or co-dominant with a host of other possible associated plants. The MCV lists no one plant community called "chaparral" because in habitats of this type, any one of a variety of shrubs can be dominant and influence the character of the vegetation. For example, in a location where chamise (*Adenostoma fasciculatum*) is predominant, the alliance is classified as an *Adenostoma fasciculatum* Shrubland Alliance, while

close by, greenbark ceanothus (*Ceanothus spinosus*) may emerge as the most common shrub and this is termed a *Ceanothus spinosus* Shrubland Alliance.

The transition to the new MCV format is ongoing. Not all alliances have been fully described and new ones are still being recognized. As such, a significant amount of field work and site surveying for accuracy would be needed to verify all existing alliances on the Island, as well as extensive research to define every alliance in the new MCV plant communities' format. The more familiar nomenclatures will continue to be used for the Island when appropriate.

An effort has been made to conform to this new format. Descriptions and general locations of each plant community as described in the California Channel Islands Species Recovery Plan (USFWS, 1984) appear below. The plant communities correspond to the classifications used in that document. Each was considered baseline information and evaluated for the potential presence of alliances as described in the MCV. Alliances with matching profiles of the given criteria are listed. In many cases, only with further investigation can the presence of some alliances be confirmed. In addition, it should be noted that not all alliances are listed within this description as many alliances have yet to be defined and new alliances are still being discovered. Descriptions and general locations of the each plant community present on the Island are given below.

Maritime Desert Scrub - (Lycium Phase, Typical Phase, and Cholla Phase): Includes a mixture of low growing, dry-season deciduous scrubs and cactus located along the southern and western shores. The predominant deciduous shrubs include California desert-thorn (*Lycium californicum*) and island senecio (*Senecio lyonii*), while California brittle-bush (*Encelia californica*) and California sagebrush (*Artemisia californica*) are the predominant maritime sage scrub species. Coastal prickly-pear (*Opuntia littoralis*) also exists in abundance. The south-facing slopes at the southern end of the island are dominated by coastal cholla (*Cylindropuntia prolifera*), but box thorn and cunyado (*Bergerocactus emoryi*) also exist.

Corresponding MCV communities:

- *Lycium californicum* (California desert-thorn) Shrubland Provisional Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Opuntia littoralis* (coast prickly pear scrub) Shrubland Alliance

Maritime Sage Scrub: Located on steep eastern slopes and in some canyons on the west side of the Island. Lemonadeberry (*Rhus integrifolia*) can be found on both sides of the Island on relatively level ground. Many types of chaparral shrubs are present, including chamise, island ceanothus (*Ceanothus megacarpus* var. *insularis*), Catalina crossosoma (*Crossosoma californicum*), Channel Island tree poppy (*Dendromecon harfordii*), toyon (*Heteromeles arbutifolia*), laurel sumac (*Malosma laurina*), Catalina cherry (*Prunus ilicifolia* ssp. *lyonii*), island redberry (*Rhamnus pirifolia*), blue elderberry (*Sambucus nigra* var. *caerulea*), and poison oak (*Toxicodendrom diversilobum*).

Corresponding MCV communities:

- *Rhus integrifolia* (lemonade berry scrub) Shrubland Alliance
- *Ceanothus megacarpus* (big pod ceanothus chaparral) Shrubland Alliance

- *Malosma laurina* (laurel sumac scrub) Shrubland Alliance

Island Woodland: Located in the western and eastern canyons, is the only tree vegetation type present on the Island. It includes Catalina cherry, Santa Cruz Island ironwood (*Lyonothamnus floribundus* ssp. *aspleniifolius*), island oak (*Quercus tomentella*), blue elderberry, and toyon.

Corresponding MCV communities:

- *Prunus ilicifolia* (holly leaf cherry chaparral) Shrubland Alliance
- *Lyonothamnus floribundus* (Catalina ironwood groves) Woodland Special Stands
- *Quercus tomentella* (Island oak groves) Woodland Special Stands

Grasslands: Cover the central uplands of the Island. Although dominated by exotic annual herbs, scattered native wildflowers also exist. Native perennial needlegrass, larkspur, and brodiaea are also present.

Corresponding MCV communities:

- *Bromus (diandrus, hordeaceus)-Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (arabicus, barbatus) (red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Lasthenia californica-Plantago erecta-Vulpia microstachys* (California goldfields-dwarf plantain-six-weeks fescue flower fields) Herbaceous Alliance
- *Nassella [Stipa] pulchra* (purple needle grass grassland) Herbaceous Alliance

Coastal Strand and Dunes: Coastal strand and dune vegetation is restricted to small areas along the south and northwest coasts of the Island. Predominantly associated with sandy substrates, several species typical of this vegetation type also occur in scattered rocky areas behind beaches. Introduced crystalline iceplant (*Mesembryanthemum crystallinum*) and grasses are abundant.

Corresponding MCV communities:

- *Carpobrotus edulis* or other ice plants (ice plant mats) Semi-Natural Herbaceous Stands
- *Abronia latifolia - Ambrosia chamissonis* (dune mat) Herbaceous Alliance

Coastal Salt Marsh: Exist on the south side of the Island. These areas are proximate to the impact zone of the shore bombardment range, and therefore, the biological information is somewhat limited. However, pickleweed (*Salicornia pacifica*), alkali heath (*Frankenia salina*), saltgrass (*Distichlis spicata*), and California sea-blite (*Suaeda californica*) are known to exist.

Corresponding MCV communities:

- Sarcocornia [Salicornia] pacifica (Salicornia depressa) (pickleweed mats) Herbaceous Alliance

- Frankenia salina (alkali heath marsh) Herbaceous Alliance
- Distichlis spicata (salt grass flats) Herbaceous Alliance

Disturbed Areas: Mainly consist of plants that are native to the Old World. Once limited to ruderal areas, these areas have expanded and exotic species are now common throughout the Island.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) (wild oats grasslands) Semi-Natural Herbaceous Stands
- *Brassica nigra* and other mustards (upland mustards) Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* (annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) (red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands

(USFWS, California Channel Islands Species Recovery Plan)

Wildlife

An abundance of marine mammals thrive in waters surrounding the Island. The most prominent are the California sea lion (*Zalophus californianus*) and the harbor seal (*Phoca vitulina*); however, porpoises and whales are frequently sighted. The Island is in the path of a migration route, which along with great depths and caves, creates a rich and varied marine environment (San Clemente Island Master Plan).

The Island supports a unique assortment of terrestrial fauna. There are two lizard species on the Island: western side-blotched lizard (*Uta stansburiana elegans*) and the San Clemente Island night lizard (*Xantusia riversiana reticulata*). As many as 240 bird species inhabit the Island at various periods of the year. Around 30 species breed on the Island, while the other species are mainly migrants. Some of the bird species include island horned lark (*Eremophila alpestris insularis*), western meadowlark (*Sturnella neglecta*), white-crowned sparrow (*Zonotrichia leucophrys*), American kestrel (*Falco sparverius*), Gambel's quail (*Callipepla gambelii*), and the exotic chukar (*Alectoris chukar*). Waterbirds are attracted to the rocky shore of the Island, which provides opportunities for foraging and resting. Some of the waterbirds on the Island include western gull (*Larus occidentalis*), Brandt's cormorant (*Phalacrocorax penicillatus*), California brown pelican (*Pelecanus occidentalis californicus*), royal tern (*Thalasseus maximus*), black oystercatcher (*Haematopus bachmani*), and Xantus' murrelet (*Synthliboramphus hypoleucus*) (USFWS, California Channel Islands Species Recovery Plan).

The Island is also home to the following bat species: California myotis (*Myotis californicus*), fringed myotis (*M. thysanodes*), Townsend's big-earned bat (*Corynorhinus townsendii*), and Mexican free-tailed bat (*Tadarida brasiliensis*). The San Clemente deer mouse (*Peromyscus maniculatus clementis*) is also native to the Island. One of the most notable mammals on the Island is the San Clemente Island fox (*Urocyon littoralis clementae*), which inhabits most of the Island (USFWS, California Channel Islands Species Recovery Plan).

Sensitive Biological Resources

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank (RPR) is indicated by the ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California), or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur on San Clemente Island, based on known habitat requirements and geographic range information:[11]

- Woven-spored lichen (*Texosporium sancti-jacobi*) CDFG Special Plants List, RPR 1B.2
- Red sand-verbena (*Abronia maritima*) RPR 4.2
- San Clemente Island bird's-foot trefoil (*Acmispon argophyllus* var. *adsurgens*) SE, RPR 1B.1
- San Clemente Island lotus (*Acmispon dendroideus* var. *traskiae*) FE, SE, RPR 1B.1
- Aphanisma (*Aphanisma blitoides*) RPR 1B.1
- Island sagebrush (*Artemisia nesiotica*) RPR 4.3
- San Miguel Island milk-vetch (*Astragalus miguelensis*) RPR 4.3
- San Clemente Island milk-vetch (*Astragalus nevinii*) RPR 1B.2
- Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
- South Coast saltscale (*Atriplex pacifica*) RPR 1B.2
- Golden-spined cereus (*Bergerocactus emoryi*) RPR 2.2
- Island morning-glory (*Calystegia macrostegia* ssp. *amplissima*) RPR 4.3
- San Clemente Island evening-primrose (*Camissonia guadalupensis* ssp. *clementina*) RPR 1B.2

[11] Status abbreviations: ABC: American Bird Conservancy Green List; BLMS: Bureau of Land Management Sensitive Species; CDF: California Department of Forestry and Fire Protection Sensitive Species; CDFG: California Department of Fish and Game; FD: Federally delisted; FE: Federally listed as Endangered; FSS: USDA Forest Service Sensitive Species; FT: Federally listed as Threatened; RPR: Rare Plant Rank; SE: State-listed as Endangered; SD: State delisted; SSC: CDFG Species of Special Concern; WBWG: Western Bat Working Group: High, Medium or Low priority

- San Clemente Island paintbrush (*Castilleja grisea*) FE, SE, RPR 1B.2
- Island ceanothus (*Ceanothus megacarpus* var. *insularis*) RPR 4.3
- Seaside cistanthe (*Cistanthe maritima*) RPR 4.2
- Nevin's woolly sunflower (*Constancea nevinii*) RPR 1B.3
- Small-flowered morning-glory (*Convolvulus simulans*) RPR 4.2
- Catalina crossosoma (*Crossosoma californicum*) RPR 1B.2
- Trask's cryptantha (*Cryptantha traskiae*) RPR 1B.1
- Island tarplant (*Deinandra clementina*) RPR 4.3
- San Clemente Island larkspur (*Delphinium variegatum* ssp. *kinkiense*) FE, SE, RPR 1B.1
- Thorne's royal larkspur (*Delphinium variegatum* ssp. *thornei*) RPR 1B.1
- South island bush-poppy (*Dendromecon harfordii* var. *rhamnoides*) RPR 1B.1
- Bright green dudleya (*Dudleya virens* ssp. *virens*) RPR 1B.2
- San Clemente Island buckwheat (*Eriogonum giganteum* var. *formosum*) RPR 1B.2
- Island buckwheat (*Eriogonum grande* var. *grande*) RPR 4.2
- Island poppy (*Eschscholzia ramosa*) RPR 4.3
- Cliff spurge (*Euphorbia misera*) RPR 2.2
- San Clemente Island bedstraw (*Galium catalinense* ssp. *acrispum*) SE, RPR 1B.2
- Showy island snapdragon (*Gambelia speciosa*) RPR 1B.2
- Nevin's gilia (*Gilia nevinii*) RPR 4.3
- San Clemente Island hazardia (*Hazardia cana*) RPR 1B.2
- Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*) RPR 1B.2
- Island jepsonia (*Jepsonia malvifolia*) RPR 4.2
- Southern island mallow (*Lavatera assurgentiflora* ssp. *glabra*) RPR 1B.1
- Robinson's pepper-grass (*Lepidium virginicum* var. *robinsonii*) RPR 1B.2
- Pygmy leptosiphon (*Leptosiphon pygmaeus* ssp. *pygmaeus*) RPR 1B.2
- San Clemente Island woodland star (*Lithophragma maximum*) FE, SE, RPR 1B.1

- San Nicolas Island lomatium (*Lomatium insulare*) RPR 1B.2
- Guadalupe Island lupine (*Lupinus guadalupensis*) RPR 1B.2
- Santa Catalina Island desert-thorn (*Lycium brevipes* var. *hassei*) RPR 1B.1
- California box-thorn (*Lycium californicum*) RPR 4.2
- Santa Cruz Island ironwood (*Lyonothamnus floribundus* ssp. *aspleniifolius*) RPR 1B.2
- San Clemente Island bush-mallow (*Malacothamnus clementinus*) FE, SE, RPR 1B.1
- Leafy malacothrix (*Malacothrix foliosa* ssp. *foliosa*) RPR 4.2
- Dunedelion (*Malacothrix incana*) RPR 4.3
- Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*) RPR 4.2
- Island bush monkeyflower (*Mimulus flemingii*) RPR 4.3
- Blair's munzothamnus (*Munzothamnus blairii*) RPR 1B.2
- Mud nama (*Nama stenocarpum*) RPR 2.2
- Many-flowered phacelia (*Phacelia floribunda*) RPR 1B.2
- Island oak (*Quercus tomentella*) RPR 4.2
- Island redberry (*Rhamnus pirifolia*) RPR 4.2
- Santa Catalina figwort (*Scrophularia villosa*) RPR 1B.2
- Santa Cruz Island rock cress (*Sibara filifolia*) FE, RPR 1B.1
- Woolly seablite (*Suaeda taxifolia*) RPR 4.2
- Southern island clover (*Trifolium palmeri*) RPR 4.2
- San Clemente Island brodiaea (*Brodiaea kinkiensis*) RPR 1B.2
- California dissanthelium (*Dissanthelium californicum*) RPR 1B.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- Appressed muhly (*Muhlenbergia appressa*) RPR 2.2
- San Clemente Island triteleia (*Triteleia clementina*) RPR 1B.2

The following special-status animal species are reported or are likely to be present on San Clemente Island based on habitat requirements and known range attributes:

- San Clemente Island snail (*Micrarionta gabbi*) CDFG Special Animals List
- San Clemente Island blunt-top snail (*Sterkia clementina*) CDFG Special Animals List
- Horseshoe snail (*Xerarionta intercisa*) CDFG Special Animals List
- Senile tiger beetle (*Cicindela senilis frosti*) CDFG Special Animals List
- Island night lizard (*Xantusia riversiana*) FT
- San Clemente sage sparrow (*Amphispiza belli clementeae*) FT, BCC, SSC, ABC
- Western snowy plover (*Charadrius alexandrinus nivosus*) FT, BCC, SSC, ABC, AWL, USBC
- San Clemente loggerhead shrike (*Lanius ludovicianus mearnsi*) FE, SSC
- Ashy storm-petrel (*Oceanodroma homochroa*) BCC, SSC, ABC
- Xantus' murrelet (*Synthliboramphus hypoleucus*) FC, BCC, ST, ABC
- San Clemente Island fox (*Urocyon littoralis clementae*) ST

Santa Catalina Island

Santa Catalina Island, part of the Channel Islands chain, is approximately 21 miles long and 8 miles wide. The Island consists of two parts connected by a low-lying isthmus at Two Harbors. The larger (southeastern) portion can be generally characterized by rolling hills with a gradual decent into the sea. The smaller (northwestern) portion is extremely steep and rugged with steep shoreline palisades. Level terrain on the Island is limited to the floors of a few large coastal canyons and areas, such as Avalon, Pebbly Beach, White's Landing, Middle Ranch, Two Harbors, and Emerald Bay. Mount Orizaba, which is located in the central portion of the Island, represents the highest peak at 2,069 feet above mean sea level (MSL).

The climate of the Island is similar to the mainland with wet mild winters and long dry periods. The majority of the Island is relatively undisturbed, consisting of grasslands, coastal sage scrub, woodlands, and chaparral. Disturbed areas include minor camping areas, paved roads, dirt roads, radio tower pads, reservoirs and a landfill.

Because of habitation, proximity to Los Angeles, the work of the Catalina Island Conservancy, and the Wrigley Marine Science Center, the Island has been studied more than any of the other California offshore islands, with national, state, and County recognition in many ways. Nationally, all of the many offshore rocks and islets within 12 nautical miles of the coast are part of the California Coastal National Monument, which is managed by the Bureau of Land Management in the U.S. Department of the Interior. Of the 64 State-recognized sensitive plants, 3 are federally endangered and 1 is federally threatened. Two vertebrates have federal status: the federal candidate marine bird Xantus' murrelet (*Synthliboramphus hypoleucus*) and the federally-endangered Santa Catalina Island fox (*Urocyon littoralis catalinae*). The fox has recently recovered from an epidemic of distemper by a combination of the luck, in that the northwestern population was so isolated and hardly suffered, and by managed captive breeding.

The State Water Resources Control Board has named a number of areas as ASBS (Area of Special

Biological Significance) for the water quality and the coincident diversity of the marine resources. These are the Northwest Santa Catalina Island ASBS #25 (20.9 miles of coastline from Isthmus Cove to Catalina Head), the Southeast Santa Catalina Island ASBS #28 (2.9 miles centered on Seal Rocks), the Western Santa Catalina ASBS #26 (4 miles of coastline from Little Harbor south to Ben Weston Beach), and the Farnsworth Bank ASBS #27 (37 acres on a submerged pinnacle, about 60 feet deep at the top, and covered with many kinds of encrusting organisms, such as the purple hydrocoral *Allopora californica*).

The State has also designated a number of State Marine Conservation Areas (SMCA) and three *de facto* State Marine Reserves (SMR) around the Island. In these conservation areas, the take method and what may be fished is limited very specifically and differs for each area. (1) Centered on Farnsworth Bank is the Farnsworth Offshore SMCA that extends from 1 to 3 nautical miles offshore and (2) the Farnsworth Onshore SMCA that extends from the coastline to meet the Farnsworth Offshore SMCA about 1 nautical mile. (3) All of Cat Harbor on the south side of the Isthmus is in Cat Harbor SMCA with take restricted to recreational fishing for marine aquatic plants and finfish. (4) Arrow Point to Lion Head Point SMCA extends from mean high tide out to 1000 feet offshore. (5) Bird Rock SMCA is centered on Bird Rock off the northwest coast and extends from the offshore boundary of Blue Cavern SMCA to 3 nautical miles offshore, with boundaries drawn due N-S off the end points of Blue Cavern SMCA. (6) Blue Cavern SMCA is really a reserve, with no take allowed even of sport fish. (7) Long Point SMR has no take allowed, which is usual for reserves. (8) Casino Point SMCA on the north end of Avalon Bay is really a reserve, with no take allowed. (9) Lover's Cove SMCA on the south side of Avalon Bay has common provisions, but includes the unusual one of the allowance of fish feeding (for the viewers on the glass-bottomed boats).

The California Department of Fish and Game maintains a list of sensitive species (all rare and uncommon), which includes those designated federally. There are 64 plants, 5 snails, and 5 vertebrates listed for the Island.

California Audubon has designated the Island and its surrounding waters to about 0.8 miles offshore as part of the Northern Channel Islands Globally Important Bird Area (IBA).

The County requires special biological review of development on the Island if the project involves a parcel that has a designated Significant Ecological Area (SEA). These areas were all specified on the basis of significant island vegetation, and in a few cases, included marine algae. There are 37 designated SEAs on the Island: Arrow Point; Avalon Canyon; Toyon Canyon; Ben Weston Beach-Mills Landing-Sentinel Rock; Bird Rock; Black Point, Black Jack Mountain and Echo Lake; Blue Cavern Point-Fishermans Cove; Buffalo Springs Reservoirs; Bulrush Canyon; Cactus Peak; Cape Canyon; Cherry Valley; Cottonwood Canyon; Descanso Canyon; Fourth of July Cove; Gallagher Canyon; Geiger Coves; Haypress Area-Hamilton Canyon; Indian Rock; Isthmus; Isthmus Canyon; Johnsons Landing; Little Harbor-Shark Harbor-Indian Head Point; Middle Ranch Canyon; Mount Orizaba; Parsons Landing; Pebbly Beach Canyon; Renton Mine Road; Silver Peak; Skull Canyon; Sweetwater Canyon; White Cove; and Wild Boar Gully.

Vegetation

Vegetation on the Island is composed of a large variety of plant community types. The rugged topography, steep and rocky shoreline, and generally undisturbed condition of the Island has produced a unique diversity of vegetative communities. Historically, the Island was mostly brushland dominated by chamise (*Adenostoma fasciculatum*) and island ceanothus (*Ceanothus megacarpus* var. *insularis*) on the northern slopes, and California sagebrush (*Artemisia californica*) and Santa

Catalina Island buckwheat (*Eriogonum giganteum* var. *giganteum*) on the south-facing slopes. Following the introduction of feral herbivores (goats, pigs, deer, and bison), this brushland was replaced in most areas by island scrub oak (*Quercus pacifica*), laurel sumac (*Malosma laurina*), toyon (*Heteromeles arbutifolia*), lemonadeberry (*Rhus integrifolia*), black sage (*Salvia mellifera*), and white sage (*S. apiana*), which dominate today. The lack of a significant fire history and minimal differences in vegetation along elevation gradients (due to an abundance of moisture) has resulted in slope orientation as a major determinant for species presence/absence.

Plant communities on the Island were classified using standard methodology and terminology. Most of the communities discussed correspond directly with those listed in Holland's Preliminary Descriptions of the Terrestrial Natural Communities of California (1986 and 1992 update). Other communities are named based on dominant species within them and/or commonly used terminology. Descriptions and general locations of each plant community on the Island, including maritime succulent scrub, southern coastal bluff scrub, island chaparral, island oak woodland, ironwood woodland, island cherry woodland, non-native grassland, native grassland, and disturbed are given below.

In recent years, ecologists have refined previous vegetation classification approaches to define communities primarily by their constituent plant assemblages, and have now widely adopted the classification system described by Sawyer, Keeler-Wolf and Evens in A Manual of California Vegetation, Second Edition 2009 (MCV). This has become the accepted standard recognized by the California Department of Fish and Game, the California Native Plant Society and the United States Fish and Wildlife Service.

The important difference between current and earlier methods is that earlier classifications were based on a variety of factors, such as physiographic features, as in the case of vernal pools; or by specific plants, as in the case of coast live oak woodland; or by the use of commonly accepted terms, as in chaparral. In the MCV, plant communities are defined with more precision as botanical alliances where one, or occasionally two, plant species are dominant or co-dominant with a host of other possible associated plants. The MCV lists no one plant community called chaparral because in habitats of this type any one of a variety of shrubs can be dominant and influence the character of the vegetation. For example, in a location where chamise (*Adenostoma fasciculatum*) is predominant it is classified as an *Adenostoma fasciculatum* Shrubland Alliance, while close by greenbark ceanothus (*Ceanothus spinosus*) may emerge as the most common shrub and this is termed a *Ceanothus spinosus* Shrubland Alliance.

The transition to the new MCV format is ongoing. Not all alliances have been fully described and new ones are still being recognized. As such, a significant amount of field work and site surveying for accuracy would be needed to verify all existing alliances on the Island, as well as extensive research to define every alliance in the new MCV plant communities' format. The more familiar nomenclatures will continue to be used for the Island when appropriate.

An effort has been made to conform to this new format. Descriptions and general locations of each plant community as described in the California Channel Islands Species Recovery Plan (USFWS, 1984) appear below. The plant communities correspond to classifications used in that document. Each was considered baseline information and evaluated for the potential presence of alliances as described in the MCV. Alliances with matching profiles of given criteria are listed. In many cases only with further investigation can the presence of some alliances be confirmed. In addition, it should be noted that not all alliances are listed within this description, as many alliances have yet to be defined and new alliances are still being discovered. Descriptions and general locations of the each plant

community present on the Island are given below.

Maritime Succulent Scrub: A low, open scrub of soft-leaved shrubs and herbs with a rich admixture of stem and leaf succulents occurring on steep coastal slopes. This community is dominated by California sagebrush and coastal prickly-pear (*Opuntia littoralis*), which is located mainly on the exposed, dry south-facing slopes typically with well-drained soils. Other species associated with this community include Catalina crossosoma (*Crossosoma californica*), California brittle-bush (*Encelia californica*), Santa Catalina Island buckwheat, bedstraw (*Galium* spp.), island broom (*Acmispon dendroideus* var. *dendroideus*), laurel sumac, lemonadeberry, and black sage.

Corresponding MCV communities:

- *Artemisia californica* (California sagebrush scrub) Shrubland Alliance
- *Opuntia littoralis* (coast prickly pear scrub) Shrubland Alliance
- *Encelia californica* (California brittle bush scrub) Shrubland Alliance
- *Deinandra clementina-Eriogonum giganteum* (island buckwheat-island tar plant scrub) Provisional Shrubland Alliance
- *Malosma laurina* (laurel sumac scrub) Shrubland Alliance
- *Rhus integrifolia* (lemonade berry scrub) Shrubland Alliance
- Salvia mellifera (black sage scrub) Shrubland Alliance

Southern Coastal Bluff Scrub**:** A low scrub community adapted to exposed areas with nearly constant winds and high salt content. It consists of the largest reservoir of sensitive species and island endemics due to its location within inaccessible areas. This community is dominated by giant coreopsis (*Leptosyne gigantea*), Catalina crossosoma, *Dudleya* spp., Santa Catalina Island buckwheat, and island tarplant (*Deinandra clementina*) (David Carroll and Associates (DCA), 1994). Southern coastal bluff scrub, which occurs on the precipitous cliff, faces typically near the mouths of canyons and adjacent to some of the Island's disturbed areas on the steep seaward (east-facing) slopes and bluffs.

Corresponding MCV communities:

- *Leptosyne gigantea* (giant coreopsis scrub) Shrubland Alliance
- *Deinandra clementina-Eriogonum giganteum* (island buckwheat-island tar plant scrub) Provisional Shrubland Alliance

Island Chaparral**:** Consists of tall broad-leafed shrubs that form a dense cover on steep slopes. Dominant species found within this community include island and MacDonald's scrub oaks (*Quercus pacifica* and *Q. macdonaldii*), feltleaf ceanothus (*Ceanothus arboreus*), chamise, island red berry, and Santa Catalina Island manzanita (*Arctostaphylos catalinae*). Island chaparral occupies canyon bottoms, most of the higher elevations, and steep, north-facing slopes.

Corresponding MCV communities:

- *Quercus pacifica* (island scrub oak chaparral) Shrubland Alliance
- *Ceanothus megacarpus* (big pod ceanothus chaparral) Shrubland Alliance
- *Adenostoma fasciculatum* (chamise chaparral) Shrubland Alliance

Island Oak Woodland: Dominated by canyon oak (*Quercus chrysolepis*) with a poorly developed shrub layer, which includes wild blackberry (*Rubus ursinus*), poison oak, heart-leaved penstemon (*Keckiella cordifolia*), and southern chaparral honeysuckle (*Lonicera subspicata* var. *denudata*). Some island oak woodlands along riparian habitat include scattered arroyo willows (*Salix lasiolepis*). This community occurs in relatively moist, protected canyon bottoms with rich alluvial soils.

Corresponding MCV communities:

- *Quercus chrysolepis* (canyon live oak forest) Forest Alliance

Island Ironwood Forest: An upland community characterized by a dominance of Catalina ironwood (*Lyonothamnus floribundus* ssp. *floribundus*). The Island endemic is a broad-leaved tree and occurs in groves of 50-100 trees located along the north- and east-facing slopes (DCA 1994). Other species occasionally associated with the ironwood forest include island scrub oak and Santa Catalina Island manzanita. The understory is sparse, supporting a number of herbaceous annuals and ferns. This community is typically found in protected canyons with rich alluvial soils in the northern portion of the Island.

Corresponding MCV communities:

- *Lyonothamnus floribundus* (Catalina ironwood groves) Woodland Special Stands

Island Cherry Woodland: An open, dense woodland dominated by Catalina cherry (*Prunus ilicifolia* ssp. *lyonii*) with an understory consisting of Santa Catalina figwort (*Scrophularia villosa*), cudweed (*Gnaphalium* spp.), common chickweed (*Cerastium glomeratum*), wild cucumber (*Marah macrocarpa*), Santa Catalina Island bushmallow (*Malacothamnus fasciculatus* var. *catalinensis*), island morning-glory (*Calystegia macrostegia* ssp. *amplissima*), and many of weedy forb and grass species. This community occurs mostly along riparian habitats and in valley/canyon bottoms in the northern portion of the Island.

Corresponding MCV communities:

- *Prunus ilicifolia* (Holly leaf cherry chaparral) Shrubland Alliance

Grassland: Consist of low, herbaceous vegetation that are dominated by grasses, but generally also harbor native forbs and bulbs as well as naturalized annual forbs. Non-native grassland consists of dominant invasive annual grasses that are primarily of Mediterranean origin. Dominant species found within this community include slender oats (*Avena barbata*), wild oats (*A. fatua*), ripgut brome (*Bromus diandrus*), red brome (*B. madritensis* ssp. *rubens*), and wild mustards (*Brassica*, *Hirschfeldia*, and *Sisymbrium* spp.). Non-native grasslands are located in small patches throughout the Island; along many of the ridges and gentle slopes with shallow clay or clay loam substrates; and in more significant acreage, on rolling hills in the southeastern portion of the Island. Native grassland consists of at least 10 percent cover of native grass species with the remaining coverage similar to

non-native grasslands. Small patches of native grassland can be found on the Island mostly mixed with non-native grasslands.

Corresponding MCV communities:

- *Avena* (*barbata*, *fatua*) (Wild oats grasslands) Semi-Natural Herbaceous Stands
- *Bromus* (*diandrus*, *hordeaceus*)-*Brachypodium distachyon* (Annual brome grasslands) Semi-Natural Herbaceous Stands
- *Bromus rubens-Schismus* (*arabicus*, *barbatus*) (Red brome or Mediterranean grass grasslands) Semi-Natural Herbaceous Stands
- *Brassica nigra* and other mustards (Upland mustards) Semi-Natural Herbaceous Stands

Disturbed Areas: Areas that either completely lack vegetation or are dominated by ruderal species within developed areas. Vegetation typically include horehound (*Marrubium vulgare*) and tree tobacco (*Nicotiana glauca*). Several disturbed areas occur throughout the Island and take the form of residential developments, paved roads, fire breaks, dirt access roads, trails, and other similarly disturbed areas.

Corresponding MCV communities: None at this time.

Wildlife

Wildlife on the Island is diverse and abundant due to the large acreage of natural open space and the diversity of habitat types. While a few wildlife species are entirely dependent on a single vegetative community, the vegetation communities within the area and adjoining areas constitute a functional ecosystem for a variety of wildlife species.

The analysis of invertebrates is severely limited due to the lack of data. The Island, however, supports healthy populations of a diverse assortment of countless invertebrate species. Amphibian populations are generally abundant and diverse due to the high moisture content provided under the shade of woodlands and the abundance of drainages. Many essential reptilian habitat characteristics are present. These include open habitats that allow free movement and high visibility and small mammal burrows for cover and escape from predators and extreme weather. These characteristics as well as the variety of habitat types present are likely to support a wide variety of reptilian species.

The scrubland, woodland, riparian, and grassland habitats provide foraging and cover habitat for year-round residents, seasonal residents, and migrating song birds. In addition, several year-round water sources and abundant raptor foraging, perching, and nesting habitat are located throughout the area. The combination of these resources as well as the confluence of many community types provides for a high diversity of bird species. Unlike other taxonomic groups, mammal populations are diverse and reflective of the unique island habitat types.

Wildlife Movement

Wildlife movement occurs throughout the Island. Concentrated movement corridors or bottlenecks are uncommon on the Island due to the abundance of uninterrupted open space and the lack of disturbed areas. In general, movement takes place in large drainages, along ridgelines, and along dirt roads. However, the small isthmus at Two Harbors represents a significant reduction in the

ability for animals to move freely between the two parts of the Island. Movement across the isthmus has been further restricted by human encroachment of the Two Harbors community and Island visitors. Although a lack of movement across the isthmus may isolate some animal populations and reduce the genetic diversity on either side, this division has provided a unique opportunity for restoration by isolating and removing feral animals from the Island.

Sensitive Biological Resources

The statuses of rare plants are hierarchically categorized by the CNPS using a rank and decimal system. The initial category level of Rare Plant Rank is indicated by ranks 1A (presumed extinct in California), 1B (rare or endangered in California and elsewhere), 2 (rare or endangered in California but more common elsewhere), 3 (more information needed, a review list), and 4 (limited distribution). In cases where the CNPS has further identified the specific threat to the species, a decimal or Threat Code is added: .1 (seriously endangered in California), .2 (fairly endangered in California) or .3 (not very endangered in California).

The following special-status plant taxa have been reported or have the potential to occur on Santa Catalina Island, based on known habitat requirements and geographic range information:

- Baja rock lichen (*Graphis saxorum*) CDFG Special Plants List
- Red sand-verbena (*Abronia maritima*) RPR 4.2
- Island broom (*Acmispon dendroideus* var. *dendroideus*) RPR 4.2
- Aphanisma (*Aphanisma blitoides*) RPR 1B.1
- Santa Catalina Island manzanita (*Arctostaphylos catalinae*) RPR 1B.2
- Coulter's saltbush (*Atriplex coulteri*) RPR 1B.2
- South Coast saltscale (*Atriplex pacifica*) RPR 1B.2
- Davidson's saltscale (*Atriplex serenana* var. *davidsonii*) RPR 1B.2
- Golden-spined cereus (*Bergerocactus emoryi*) RPR 2.2
- Round-leaved filaree (*California macrophylla*) RPR 1B.1
- Island ceanothus (*Ceanothus megacarpus* var. *insularis*) RPR 4.3
- Southern tarplant (*Centromadia parryi* ssp. *australis*) RPR 1B.1
- Island mountain-mahogany (*Cercocarpus betuloides* var. *blancheae*) RPR 4.3
- Catalina Island mountain-mahogany (*Cercocarpus traskiae*) FE, SE, RPR 1B.1
- Seaside cistanthe (*Cistanthe maritima*) RPR 4.2
- Nevin's woolly sunflower (*Constancea nevinii*) RPR 1B.3

- Small-flowered morning-glory (*Convolvulus simulans*) RPR 4.2
- Catalina crossosoma (*Crossosoma californicum*) RPR 1B.2
- Island tarplant (*Deinandra clementina*) RPR 4.3
- South island bush-poppy (*Dendromecon harfordii* var. *rhamnoides*) RPR 1B.1
- Western dichondra (*Dichondra occidentalis*) RPR 4.2
- Beach spectaclepod (*Dithyrea maritima*) ST, 1B.1
- Greene's dudleya (*Dudleya greenei*) RPR 4.2
- Catalina Island dudleya (*Dudleya virens* ssp. *hassei*) RPR 1B.2
- Island green dudleya (*Dudleya virens* ssp. *insularis*) RPR 1B.2
- Bright green dudleya (*Dudleya virens* ssp. *virens*) RPR 1B.2
- Santa Catalina Island buckwheat (*Eriogonum giganteum* var. *giganteum*) RPR 4.3
- Island buckwheat (*Eriogonum grande* var. *grande*) RPR 4.2
- Island poppy (*Eschscholzia ramosa*) RPR 4.3
- Cliff spurge (*Euphorbia misera*) RPR 2.2
- Santa Catalina Island bedstraw (*Galium catalinense* ssp. *catalinense*) RPR 1B.2
- Nuttall's island bedstraw (*Galium nuttallii* ssp. *insulare*) RPR 4.3
- Showy island snapdragon (*Gambelia speciosa*) RPR 1B.2
- Nevin's gilia (*Gilia nevinii*) RPR 4.3
- Palmer's grapplinghook (*Harpagonella palmeri*) RPR 4.2
- Island rush-rose (*Helianthemum greenei*) FT, RPR 1B.2
- Decumbent goldenbush (*Isocoma menziesii* var. *decumbens*) RPR 1B.2
- Island jepsonia (*Jepsonia malvifolia*) RPR 4.2
- Southern island mallow (*Lavatera assurgentiflora* ssp. *glabra*) RPR 1B.1
- Fragrant pitcher sage (*Lepechinia fragrans*) RPR 4.2
- Santa Barbara honeysuckle (*Lonicera subspicata* var. *subspicata*) RPR 1B.2
- Santa Catalina Island desert-thorn (*Lycium brevipes* var. *hassei*) RPR 1B.1

- California box-thorn (*Lycium californicum*) RPR 4.2
- Santa Catalina Island ironwood (*Lyonothamnus floribundus* ssp. *floribundus*) RPR 1B.2
- Small-flowered microseris (*Microseris douglasii* ssp. *platycarpha*) RPR 4.2
- Santa Catalina Island monkeyflower (*Mimulus traskiae*) RPR 1A
- Coast woolly-heads (*Nemacaulis denudata* var. *denudata*) RPR 1B.2
- Short-lobed broomrape (*Orobanche parishii* ssp. *brachyloba*) RPR 4.2
- Lyon's pentachaeta (*Pentachaeta lyonii*) FE, SE, RPR 1B.1
- Engelmann oak (*Quercus engelmannii*) RPR 4.2
- Island scrub oak (*Quercus pacifica*) RPR 4.2
- Island oak (*Quercus tomentella*) RPR 4.2
- Island redberry (*Rhamnus pirifolia*) RPR 4.2
- Santa Catalina Island currant (*Ribes viburnifolium*) RPR 1B.2
- Santa Catalina figwort (*Scrophularia villosa*) RPR 1B.2
- Chaparral ragwort (*Senecio aphanactis*) RPR 2.2
- Santa Cruz Island rock cress (*Sibara filifolia*) FE, RPR 1B.1
- Wallace's nightshade (*Solanum wallacei*) RPR 1B.1
- Woolly seablite (*Suaeda taxifolia*) RPR 4.2
- Southern island clover (*Trifolium palmeri*) RPR 4.2
- Catalina mariposa lily (*Calochortus catalinae*) RPR 4.2
- California dissanthelium (*Dissanthelium californicum*) RPR 1B.2
- Vernal barley (*Hordeum intercedens*) RPR 3.2
- Chaparral rein orchid (*Piperia cooperi*) RPR 4.2

The following special-status animal species are reported or are likely to be present on Santa Catalina Island based on habitat requirements and known range attributes:

- Santa Catalina lancetooth (*Haplotrema catalinense*) CDFG Special Animals List
- Shepard's snail (*Pristiloma shepardae*) CDFG Special Animals List

- Catalina mountainsnail (*Radiocentrum avalonense*) CDFG Special Animals List
- San Clemente Island blunt-top snail (*Sterkia clementina*) CDFG Special Animals List
- Sandy beach tiger beetle (*Cicindela hirticollis gravida*) CDFG Special Animals List
- Santa Catalina garter snake (*Thamnophis hammondii* ssp.) CDFG Special Animals List
- Bald eagle (*Haliaeetus leucocephalus*) SE, CDF, CDFG Fully Protected
- Xantus' murrelet (*Synthliboramphus hypoleucus*) FC, BCC, ST, ABC
- Santa Catalina Island shrew (*Sorex ornatus willetti*) SSC
- Santa Catalina Island fox (*Urocyon littoralis catalinae*) FE, ST

Santa Monica Mountains

For a description of the resources in the Santa Monica Mountains, please refer to the description for the Santa Monica Mountains Significant Ecological Area (SEA) in Section IV.

VI. Watersheds

Antelope Valley Watershed

The southern half of the Lahontan hydrologic region is located in the Antelope Valley. Unlike the coastal watersheds in Los Angeles County, it is a closed basin on the edge of the Mojave Desert, having no outlet to the ocean or major river system. Numerous streams drain the north-facing San Gabriel Mountains, carrying rainfall and snow melt from the Angeles National Forest into the Antelope Valley. Significant stream systems in the Antelope Valley are Amaroosa Creek, Big Rock Creek, and Little Rock Creek.

During most years, the rainfall in the Antelope Valley is scant, averaging less than eight inches per year. Every few years, major storms cause flooding, sending sheets of water flow across the eastern portion of the Antelope Valley to the dry lakebeds of Rosamond and Rodgers lakes in Kern County. Uninhibited by development, the sheet flow filters into the groundwater basin or evaporates on the lakebeds, leaving the surface smooth and flat. This natural runoff process is important for two reasons: 1) it benefits the local communities with groundwater recharge; and 2) it seasonally resurfaces the dry lake beds, which are used for aircraft landings at Edwards Air Force Base.

The Lahontan Regional Water Quality Control Board monitors the Antelope Valley watershed through its Basin Plan for the region. The Basin Plan calls for land use controls to help reduce pollutants in stormwater runoff. In particular, the Basin Plan advocates for limiting impervious surfaces, restoring natural vegetation and protecting the headwaters of stream channels and riparian areas.

Los Angeles River Watershed

The Los Angeles River watershed covers approximately 870 square miles, a small part of which extends into Ventura County. It includes the San Fernando Valley and is the largest watershed in the Los Angeles Basin. The river extends 51 stream miles, from the confluence of Bell Creek and Arroyo

Calabasas, to the Pacific Ocean. The first 32 miles of the river flow through the cities of Los Angeles, Burbank, and Glendale, and then, subsequently, through Vernon, Commerce, Maywood, Bell, Bell Gardens, Lynwood, Compton, South Gate, Paramount, Cudahy, and Long Beach. Numerous tributaries feed the Los Angeles River, as it flows through the San Fernando Valley and the coastal plain to the Long Beach Harbor. These tributaries include Tujunga Wash, Verdugo Wash, Arroyo Seco, Rio Hondo, and Compton Creek. Several important biotic communities exist in the northern tributaries that feed the river, including freshwater marsh areas in Tujunga Canyon and the Hansen Flood Control Basin. The natural habitat in these tributaries provides a semi-protected corridor for wildlife between the Angeles National Forest, Santa Monica Mountains National Area, and the Los Angeles River.

By 1960, the Los Angeles River was lined with concrete along most of its length by the U.S. Army Corps of Engineers in order to prevent the loss of lives and property from flood damage. As a result, the Los Angeles River's sole purpose for years was efficient water conveyance—carrying stormwater from the land to the ocean as quickly as possible. Efforts continue under the auspices of the Los Angeles County Flood Control District to capture as much stormwater as possible and redirect it to regional groundwater recharge areas to replenish groundwater basins, saving thousands of acre-feet of water every year.

The volume of pollutants that enters the Los Angeles River is extremely high due to accumulated urban stormwater runoff from the hundreds of square miles of impervious land uses that flank the Los Angeles River. To address these problems, the County, the Flood Control District, local jurisdictions, a variety of stakeholders, and the Los Angeles Regional Water Quality Control Board are implementing programs to reduce the number and concentration of pollutants that enter the Los Angeles River.

Over the past two decades, interest the Los Angeles River's recreational and ecological functions has reemerged, culminating in a riverwide planning effort in the 1990s, which resulted in the adoption of the *Los Angeles River Master Plan* by the Board of Supervisors in 1996. The Plan was created through a cooperative effort by the County and many river stakeholder groups for the enhancement of aesthetic, recreational, flood control and environmental functions of the Los Angeles River. The Plan seeks to do so by expanding bikeway, walking and equestrian trails to and along the Los Angeles River, enhancing existing trails and habitat with landscaping, and promoting economic development opportunities. Since the adoption of the Plan, an advisory committee has overseen many new projects, including bike trails, pocket parks, equestrian trail enhancements, art and signage. So much public interest in the river has been generated that many more improvements are anticipated in the future. The County's Bicycle Master Plan also prioritizes the Los Angeles River bike path.

The County is also working with various organizations and agencies that are involved in watershed-related planning activities, such as the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, the Council for Watershed Health, and the Flood Control District. The attention being paid to the watershed has resulted in a better understanding of its functions and generated an unprecedented network of residents, private organizations and government entities dedicated to watershed management. The County has also partnered with the City of Los Angeles on implementation of its 2007 Los Angeles River Revitalization Master Plan. Subsequently, the County Board of Supervisors and Los Angeles City Council adopted the Los Angeles River Memorandum of Understanding, which established the Los Angeles River Cooperation Committee to prioritize cooperative implementation of Los Angeles River projects. In addition, the County is a partner in the U.S. Army Corps of Engineers' Los Angeles River Ecosystem Restoration Feasibility Study (started

in 2006 for which the City of Los Angeles is serving as primary local sponsor). The County is also a partner with the U.S. Bureau of Reclamation on the Los Angeles Basin Study to prioritize stormwater capture and infiltration that will result in watershed-wide conservation.

Compton Creek Sub-Watershed

Compton Creek drains an area of approximately 42 square miles, including portions of the cities of Carson, Compton, Long Beach, Los Angeles, Lynwood, and South Gate and portions of the unincorporated communities of Florence-Firestone, Willowbrook, and Rancho Dominguez. Compton Creek drains into the Los Angeles River, which then empties into San Pedro Bay at the eastern edge of Long Beach Harbor.

With more than 700,000 residents, the Compton Creek watershed is highly urbanized and most of its drainage courses are lined with concrete. Approximately 97 percent of the land area is occupied by homes, businesses, roads, and similar uses. As a result of excess levels of trash and coliform bacteria, surface and groundwater quality in Compton Creek has been degraded, natural hydrologic functions modified, and plant and wildlife diversity reduced.

In recent years, various groups, cities, and agencies have worked to transform Compton Creek into a valued community asset, improve and expand open space, optimize water resources, preserve and restore habitat, and create a network of trails and bike paths. Some of these efforts have been informally coordinated, in recognition of the potential to extend benefits beyond the borders of individual cities, create opportunities to leverage benefits, and maximize funding resources.

Los Angeles Harbor Watershed

The major river system within the area that drains to Los Angeles Harbor is the Dominguez Channel. The Dominguez Channel watershed, part of the larger Los Angeles Harbor watershed, is located within the southern portion of Los Angeles County and encompasses approximately 110 square miles of intensely urban area. Approximately 81 percent of the watershed is developed. Residential development covers nearly 40 percent of the watershed, and another 41 percent is made up by industrial, commercial and transportation uses. With a population of nearly 1 million, considerable demands are made on infrastructure and services within the watershed. Local water supply is limited and the majority of water use is provided by imported sources. Parkland and open space are in short supply and generally are deficient. Another significant stream system within the Los Angeles Harbor watershed is the Wilmington Drain.

There are significant stormwater pollution issues in this watershed. For example, old waste disposal practices have left DDT and PCBs deposited in the channel bottom, which are carried to the harbor in land and aquatic sediment swept up and re-suspended by stormwater.

Nine unincorporated areas are located within this urban-industrial watershed and each of these areas affects and is affected by the health and function of Dominguez Channel and its tributaries.

San Gabriel River Watershed

The San Gabriel River watershed encompasses part of the Angeles National Forest, the San Gabriel Valley, and large urban areas in southeast portion of Los Angeles County. It is bounded by the Los Angeles River on much of its western flank, and extends to San Bernardino and Orange counties. Totaling more than 640 square miles, the watershed has extensive areas of un-channeled tributaries, which support riparian and woodland habitats. Its northern reaches in the Angeles

National Forest are dramatically different from the developed 167 square miles in the Los Angeles Basin. The U.S. Congress has preserved two wilderness areas within this watershed: the San Gabriel Wilderness Area, 36,215 acres along the west fork of the San Gabriel River, and Sheep Mountain Wilderness Area, 31,680 acres along the east fork of the San Gabriel River.

The main watercourse in this watershed is the San Gabriel River. The San Gabriel River extends 59 stream miles from the Angeles National Forest to the Pacific Ocean, draining 350 square miles of land. It also recharges groundwater tables in several basins. The major tributaries that feed the San Gabriel River include Coyote Creek, Walnut Creek, Puente Creek and San Jose Creek. The upper section of the San Gabriel River and its tributaries are still considered relatively pristine. However, intensive recreational use and erosion due to wildfires in this area may threaten water quality and wildlife that depend on the river. The middle section of the river has been extensively modified throughout the San Gabriel Valley to diminish flood damage and encourage groundwater recharge. The lower section, similar to the Los Angeles River, is lined with concrete from Firestone Boulevard to the bay. In contrast to the upper and middle sections of the river, dry weather flow in the lower section stems primarily from urban runoff and treated effluent from municipal wastewater treatment facilities.

A clear link exists between the health of this watershed and the quality of life for millions of Los Angeles County residents. The upper reaches of the San Gabriel River support wildlife, deliver drinking water and provide a myriad of recreational opportunities. To protect and enhance the multiple benefits of this resource a riverwide planning effort entitled *San Gabriel River Master Plan* was adopted in 2006. This effort, spearheaded by the County, brings together a dynamic group of stakeholders, including the 13 cities along the San Gabriel River, residents, environmental groups and many business and community leaders.

The County is working with stakeholders, such as the San Gabriel and Lower Los Angeles Rivers and Mountains Conservancy, the Santa Monica Mountains Conservancy, and the Flood Control District. Together, stakeholders developed a watershed and open space plan in 2001 entitled *Common Ground: From the Mountains to the Sea* that provides general guidelines for improvement of the San Gabriel and Lower Los Angeles Rivers watersheds through community development, public awareness, preservation of open space and creation of recreational opportunities—particularly along the rivers.

Santa Clara River Watershed

The Santa Clara River watershed is an extensive hydrologic system that encompasses the western portion of the Angeles National Forest in Los Angeles County and the eastern portion of Los Padres National Forest in Ventura County. The Santa Clara River—an essential component of this watershed—recharges local groundwater, provides riparian habitat and supplies water to downstream agricultural lands in Ventura County. It is the largest relatively unaltered river system in Southern California, and the single most important natural wildlife corridor in Los Angeles County. The Santa Clara River and its tributaries provide drainage for approximately 654 square miles of the upper watershed within Los Angeles County. The Santa Clara River's major tributaries include Soledad Canyon, Castaic Creek, San Francisquito Canyon Creek, Bouquet Canyon Creek, Sand Canyon Creek, Mint Canyon Creek and Santa Clara River South Fork. Several endangered species are found in this watershed, including the arroyo toad and the unarmored three-spine stickleback. Another important stretch of the Santa Clara River supports a variety of riparian-obligate songbirds and birds of prey between Castaic Junction and Blue Cut near the Ventura County line, where the groundwater basin thins and narrows, forcing groundwater toward the surface.

A link exists between the health of this watershed, particularly its tributaries, and development in the area. Urban expansion in the 1990s and early 2000s impacted the watershed on several levels, including a reduction in local water supplies and disappearing open space. Furthermore, the land use activities in this area have created many square miles of impervious surfaces, which have created more urban runoff and reduced the amount of water that would naturally percolate into groundwater basins. By employing watershed management techniques, the County aims to curb this trend.

Santa Monica Bay Coastal Watersheds

The County, other agencies, cities, and stakeholders coordinate the management of the coastal watersheds of Santa Monica Bay as two distinct management areas, due to the vast differences in land use and population density: North Santa Monica Bay watersheds (North Bay) and the South Santa Monica Bay watersheds (South Bay). The North Bay consists of the Malibu Creek and Topanga Creek watersheds as well as sixteen other rural coastal watersheds. North Bay watersheds are primarily natural open space with low-density residential developments. The South Bay includes Ballona Creek watershed, Marina Del Rey, and 10 urban coastal sub-watersheds. Although vastly different from one another, these watersheds have a direct impact on the quality and quantity of water delivered to the Santa Monica Bay. The Malibu Creek watershed traverses a rural mountainous area, while the Ballona Creek watershed is comprised of intensely urban development.

The coastal watersheds of the Santa Monica Bay extend from the Ventura County-Los Angeles County line to outer Cabrillo Beach in San Pedro. This length includes 44 beaches along 55 miles of coastline, attracting over 55 million beach visitors each year. While the Malibu Creek and Ballona Creek watersheds also drain to Santa Monica Bay, they are typically managed as separate areas due to their significant size.

Ballona Creek Sub-Watershed

The Ballona Creek watershed is located in the western portion of Los Angeles County and is approximately 130 square miles in size. It is highly urbanized and home to more than 1.6 million residents. It includes the cities of Beverly Hills and West Hollywood; portions of the cities of Culver City, Inglewood, Los Angeles, Santa Monica; Caltrans facilities; the Ballona Wetlands, and the unincorporated communities of Marina Del Rey, Baldwin Hills, Ladera Heights and a portion of Playa Del Rey. Centinela Creek, Sepulveda Canyon Channel and Benedict Canyon Channel are significant tributaries of Ballona Creek.

Over the years, the urbanization of the Ballona Creek watershed routed many small tributaries through storm drains. These storm drains collect runoff from city streets and carry it to major tributaries and eventually to Ballona Creek, which flows into the Santa Monica Bay. Major contributors to the impaired water quality in Ballona Creek are urban runoff and illegal dumping. These pollutants significantly contribute to pollution in the Santa Monica Bay, degrading ecosystems and recreational opportunities.

The Ballona Creek Trash TMDL became effective on August 11, 2005. To comply with this regulation, the County adopted an aggressive strategy to reduce the amount of trash entering Ballona Creek from unincorporated areas.

Malibu Creek Sub-Watershed

Malibu Creek watershed is the largest rural watershed in North Santa Monica Bay. It is

approximately 109 square miles and consists of over 75 percent natural open space. The Malibu Creek watershed encompasses a major portion of the Santa Monica Mountains and is one of many sub-watersheds that drain the mountain range. Over the past twenty years, the number of residents living in the Malibu Creek watershed has doubled. This growth and development has increased runoff, sedimentation and demand for imported water, and caused various tributaries that feed Malibu Creek to be channelized. As a result, the natural flow of water within the watershed has changed, degrading oak and riparian woodlands, steelhead trout populations, and the Malibu Lagoon.

The primary watercourse draining this watershed is Malibu Creek, which flows into Malibu Lagoon. The health and function of Malibu Creek and its tributaries is an important issue as these waterways drain 109 square miles of the watershed into Malibu Lagoon and the Santa Monica Bay—a National Estuary.[12] Two important plant communities comprise the lagoon: the coastal salt marsh and coastal strand, and over 200 species of birds use the lagoon as a refuge.

A clear link exists between the health of Malibu Creek watershed, particularly Malibu Creek, and development in the mountains. Land use activities account for about half of all pollutants that enter the Malibu watershed drainage. Pollution sources include roadway runoff, septic system overflow, new construction, and vegetation clearance.

The Santa Monica Mountains North Area Plan, adopted by the Board of Supervisors in 2000, and the 1986 Local Coastal Plan address the adverse affect of development on the Santa Monica Mountains. These plans, which cover portions of the mountains north of the coastal zone, significantly restrict the potential number of dwelling units that may be built in the mountains. The guiding principle of the plan is to let the land dictate the site and type of development that should be allowed.

Marina Del Rey Sub-Watershed

The Marina Del Rey watershed is approximately two square miles in size and its drainage area is mostly within the City of Los Angeles. The unincorporated marina and harbor were mainly constructed from remnants of the Ballona Creek Wetlands and Estuary.

VII. Agricultural Resources

Agricultural Resource Areas Methodology

Figure 6.5 in the Conservation and Natural Resources Element shows the County's Agricultural Resource Areas (ARAs), where the County promotes the preservation of agricultural activities. The ARA boundaries were derived from farmland identified by the State Department of Conservation, including Prime Farmland, Farmland of Statewide Importance, Farmland of Local Importance, and Unique Farmland. In addition, the ARAs include lands that received permits from the Los Angeles County Agricultural Commissioner/Weights and Measures.

[12] The Santa Monica Bay is designated a National estuary under the U.S. EPA's National Estuaries Program.

To reflect changes in land uses and address environmental concerns, the following were excluded from the ARAs:

- Significant Ecological Areas (SEA) and Ecological Transition Areas (ETA);
- Approved specific plan areas;
- Approved large-scale renewable energy facilities;
- Lands outside of the Santa Clarita and Antelope Valleys, where farming is concentrated; and
- Lands that are designated Public and Semi-Public (P).

Data from the U.S. Census of Agriculture

Table E.1: Change in Number and Acreage of Farms in Los Angeles County, 1987-2007

	1987	**1992**	**1997**	**2002**	**2007**
Farms (number)	2,035	1,446	1,226	1,543	1,734
Change from previous year	-	-589	-220	317	191
Percent change from previous year	-	-28.94%	-15.21%	25.86%	12.38%
Land in farms (acres)	280,156	183,569	130,838	111,458	108,463
Change from previous year	-	-96,587	-52,731	-19,380	-2,995
Percent change from previous year	-	-34.48%	-28.73%	-14.81%	-2.69%

Source: U.S. Census of Agriculture, 1987-2007.

Appendix F: Parks and Recreation Element Resources

I. Los Angeles County Parks and Recreation Inventory

Table F.1: Los Angeles County Parks and Recreation Inventory

Park	Park Planning Area	Park Classification	Type	Acre(s)
Acton Park	1	Community	Local	12
Acton Wash Sanctuary	1	Special Use	Regional	75
Adventure Park	9	Community	Local	15
Alondra Community Regional Park	10	Community Regional	Local	53
Alondra Golf Course	10	Special Use	Regional	151
Alpine Butte Wildlife Sanctuary	1	Special Use	Regional	323
Altadena Golf Course	7	Special Use	Regional	58
Amigo Park	9	Neighborhood	Local	5
Apollo Community Regional Park	1	Community Regional	Regional	54
Arboretum and Botanic Garden	7	Special Use	Regional	119
Arcadia Community Regional Park	7	Community Regional	Regional	53
Athens Park	8	Community Regional	Regional	19
Atlantic Avenue Park	8	Neighborhood	Local	2
Avocado Heights Park	6	Neighborhood	Local	8
Bassett Park	6	Neighborhood	Local	10
Belvedere Community Regional Park	8	Community Regional	Regional	31

Park	Park Planning Area	Park Classification	Type	Acre(s)
Mary McLeod Bethune Park	8	Neighborhood	Local	5
Big Rock Creek Wildlife Sanctuary	1	Special Use	Regional	161
Blalock Sanctuary	1	Special Use	Regional	140
Bill Blevins Park	6	Neighborhood	Local	5
Bodger Park	10	Community	Local	12
Frank G. Bonelli Regional Park	6	Regional	Regional	1,797
Thomas S. Burton Park	6	Neighborhood	Local	12
Butte Valley Wildflower Sanctuary	1	Special Use	Regional	351
Roy Campanella Park	8	Neighborhood	Local	9
George Washington Carver Park	8	Neighborhood	Local	6
Castaic Lake State Recreation Area	2	Regional	Regional	12,658
Castaic Sports Complex	2	Community Regional	Regional	54
Cerritos Community Regional Park	9	Community Regional	Regional	84
Charter Oak Park	6	Community	Local	12
Chesebrough Park	2	Neighborhood	Local	7
City Terrace Park	8	Community	Local	15
Countrywood Park	6	Neighborhood	Local	6
Crescenta Valley Community Regional Park	3	Community Regional	Regional	38
Dalton Park	6	Neighborhood	Local	5

Park	Park Planning Area	Park Classification	Type	Acre(s)
Del Aire Park	10	Neighborhood	Local	7
Del Valle Park	2	Neighborhood	Local	5
Descanso Gardens	7	Special Use	Regional	149
Desert Pines Sanctuary	1	Special Use	Regional	99
Devil's Punchbowl Natural Area	1	Special Use	Regional	1,259
Dexter Park	3	Community Regional	Regional	40
Diamond Bar Golf Course	6	Special Use	Regional	172
East Rancho Dominguez Park	9	Neighborhood	Local	6
Eaton Canyon Golf Course	7	Special Use	Regional	66
Eaton Canyon Nature Center	7	Special Use	Regional	198
El Cariso Community Regional Park	2	Community Regional	Regional	80
El Cariso Golf Course	2	Special Use	Regional	83
Enterprise Park	9	Community	Local	10
Fair Oaks Park	2	Neighborhood	Local	6
Charles S. Farnsworth Park	7	Community	Local	15
John Anson Ford Amphitheatre	8	Special Use	Regional	31
Deane Dana Friendship Park and Nature Center	10	Special Use	Regional	119
Ganesha Park	7	Pocket	Local	0.6
Carl O. Gerhardy Wildlife Sanctuary	1	Special Use	Regional	547
Kenneth Hahn State Recreation Area	5	Regional	Regional	308

Park	Park Planning Area	Park Classification	Type	Acre(s)
William S. Hart Regional Park	2	Special Use	Regional	162
Hasley Canyon Equestrian Center	2	Special Use	Regional	67
Hasley Canyon Park	2	Neighborhood	Local	5
Maggie Hathaway Golf Course	8	Special Use	Regional	13
Gloria Heer Park	6	Neighborhood	Local	10
Eastside Eddie Heredia Boxing Club	8	Pocket	Local	0.2
Hollywood Bowl	5	Special Use	Regional	69
Rueben Ingold Parkway	5	Pocket	Local	3
Jackrabbit Flats Wildlife Sanctuary	1	Special Use	Regional	114
Helen Keller Park	8	Neighborhood	Local	7
Knollwood Golf Course	5	Special Use	Regional	150
Knollwood Pool	5	Special Use	Regional	Part of golf course
Jake Kuredjian Park	5	Neighborhood	Local	6
La Mirada Community Regional Park	9	Regional	Regional	76
La Mirada Golf Course	9	Special Use	Regional	127
Ladera Park	5	Community	Local	16
Lakewood Golf Course	9	Special Use	Regional	177
George Lane Park	1	Community	Local	14
Lennox Park	10	Neighborhood	Local	6
Loma Alta Park	7	Neighborhood	Local	18

Park	Park Planning Area	Park Classification	Type	Acre(s)
Los Amigos Golf Course	9	Special Use	Regional	146
Los Robles Park	6	Neighborhood	Local	5
Los Verdes Golf Course	10	Special Use	Regional	163
Earvin "Magic" Johnson Park	8	Community Regional	Regional	104
Manzanita Park	6	Community	Local	12
David March Park	2	Neighborhood	Local	12
Marshall Canyon Golf Course	6	Special Use	Regional	157
Marshall Canyon Park	6	Special Use	Regional	119
Allen J. Martin Park	6	Neighborhood	Local	7
Everett Martin Park	1	Neighborhood	Local	6
Amelia Mayberry Park	9	Community	Local	14
McNees Park	9	Pocket	Local	0.6
Mescal Wildlife Sanctuary	1	Special Use	Regional	99
Michillinda Park	7	Pocket	Local	2
Mona Park	8	Neighborhood	Local	8
Monteith Parkway	5	Pocket	Local	0.6
Monument Park	7	Pocket	Local	0.4
Mountain Meadows Golf Course	6	Special Use	Regional	189
Northbridge Park	2	Neighborhood	Local	9
Eugene A. Obregon Park	8	Neighborhood	Local	11
Jesse Owens Community Regional Park	8	Community Regional	Regional	9

Park	Park Planning Area	Park Classification	Type	Acre(s)
Pacific Crest Park	2	Neighborhood	Local	9
Pamela Park	7	Neighborhood	Local	3
Park Learning Grove County Park	10	Pocket	Local	0.5
Parque de los Suenos	8	Pocket	Local	1.6
El Parque Nuestro	8	Pocket	local	0.6
Pathfinder Community Regional Park	6	Community Regional	Regional	29
Theodore Payne Wildlife Sanctuary	1	Special Use	Regional	157
Pearblossom Park	1	Neighborhood	Local	8
Peck Road Water Conservation Park	7	Special Use	Regional	155
Pepperbrook Park	6	Neighborhood	Local	5
Phacelia Wildlife Sanctuary	1	Special Use	Regional	160
Pickens Park	3	Pocket	Local	0.2
Pico Canyon Park	2	Neighborhood	Local	21
Placerita Canyon Nature Center	2	Special Use	Regional	507
Rimgrove Park	6	Neighborhood	Local	8
Dr. Richard H. Rioux Memorial Park	2	Community	Local	17
Virginia Robinson Gardens	5	Special Use	Regional	6
Jackie Robinson Park	1	Neighborhood	Local	9
Franklin D. Roosevelt Park	8	Community Regional	Regional	24
Carolyn Rosas Park	6	Neighborhood	Local	6

Park	Park Planning Area	Park Classification	Type	Acre(s)
Rowland Heights County Park	6	Community	Local	6
Ruben F. Salazar Park	8	Neighborhood	Local	8
San Angelo Park	6	Neighborhood	Local	9
San Dimas Canyon Community Regional Park	6	Regional	Regional	19
San Dimas Canyon Nature Center	6	Special Use	Regional	110
Santa Anita Golf Course	7	Special Use	Regional	131
Santa Catalina Island Regional Park	11	Regional	Regional	41,000
Santa Fe Dam Recreational Area	7	Regional	Regional	989
Saybrook Park	8	Neighborhood	Local	6
Peter F. Schabarum Regional Park	6	Regional	Regional	575
Sorensen Park	9	Community	Local	11
Stephen Sorenson Park	2	Community Regional	Regional	108
South Coast Botanic Garden	10	Special Use	Regional	82
William Steinmetz Park	6	Community	Local	12
Sunshine Park	6	Neighborhood	Local	7
Tesoro Adobe Historic Park	2	Special Use	Regional	2
Trailview Park	6	Pocket	Local	51
Tujunga Ponds Wildlife Sanctuary	3	Special Use	Regional	13
Two Strike Park	3	Neighborhood	Local	8
Val Verde Community	2	Community	Regional	58

Park	Park Planning Area	Park Classification	Type	Acre(s)
Regional Park		Regional		
Valleydale Park	6	Neighborhood	Local	9
Vasquez Rocks Natural Area and Nature Sanctuary	2	Special Use	Regional	913
Veterans Memorial Community Regional Park	3	Community Regional	Regional	97
Victoria Community Regional Park	9	Community Regional	Regional	34
Victoria Golf Course	9	Special Use	Regional	167
Walnut Creek Community Regional Park	6	Special Use	Regional	55.2
Walnut Nature Park	8	Special Use	Regional	0.4
Chester Washington Golf Course	8	Special Use	Regional	126
Col. Leon H. Washington Park	8	Neighborhood	Local	13
Ted Watkins Memorial Park	8	Community Regional	Regional	28
West Creek Park	2	Community	Local	16.9
Charles White Park	7	Neighborhood	Local	5
Whittier Narrows Golf Course	7	Special Use	Regional	15
Whittier Narrows Nature Center	7	Special Use	Regional	Part of WNRA
Whittier Narrows Recreation Area (WNRA)	7	Regional	Regional	1,293

Appendix G: Noise Element Resources

I. Sound Descriptors

Sound may be described by three variables: amplitude, frequency, and time pattern.

Amplitude

Sound pressure is the amplitude or measure of the difference between atmosphere pressure (with no sound present) and total pressure (with sound present). Although there are measures of sound amplitude, sound pressure is the fundamental measure and is the basic ingredient of the various measurement descriptors.

The unit of sound pressure is the decibel (dB) scale. The decibel scale is a logarithmic, not linear scale. A logarithmic scale is used because the range of sound intensities is so great that it is convenient to compress the scale to encompass all the sounds that need to be measured. The human ear has a wide range of responses to sound amplitude. Sharp, painful sound is 10 million times greater in sound pressure than the least audible sound. In decibels, this 10 million to 1 ratio is simplified logarithmically to 140 dB.

Another property of the decibel scale is that the sound pressure levels of two separate sounds are not directly (arithmetically) additive. For example, if a sound of 70 dB is added to another sound of 70 dB, the total is only a 3-decibel increase (73 dB), not a doubling to 140 dB. Furthermore, if two sounds are of different levels, the lower level adds less to the higher as this difference increases. If the difference is as much as 10 dB, the lower level adds almost nothing to the higher level. In other words, adding a 60-decibel sound to a 70-decibel sound only increases the total sound pressure level by less than 0.5-decibel.

Frequency

The rate at which a sound source vibrates, or makes the air vibrate, determines frequency. The unit of time is usually one second and the term “Hertz” (Hz) is used to designate the number of cycles per second.

The human ear and that of most animals has a wide range of responses. Humans can identify sounds with frequencies from about 16 Hz to 20,000 Hz. Because pure tones are relatively rare in life situations, most sounds consist of a complex mixture of multiple frequencies.

Time Pattern

Sound may be described in terms of its pattern of time and level: continuity, fluctuation, impulsiveness, intermittency. Continuous sounds are those produced for relatively long periods at a constant level, such as the ringing of a telephone or aircraft take-offs and landings. Impulse noises are sounds that are produced in an extremely short span of time, such as a pistol shot or a hand clap. Fluctuating sounds vary in level over time, such as the loudness of traffic sounds at a busy intersection.

II. Noise Measurement

Noise measurements are made in accordance with existing standards and regulations. Sound is

measured by a sound level meter (SLM), which is a device that can give the measured sound pressure level (SPL). The County Noise Control Ordinance specifies that an SLM needs to satisfy the requirements pertinent for type S2A meters, in accordance with the American National Standards Institutes (ANSI) specifications or the most recent revision (1985 ANSI S1.4A).

In accordance with the County Noise Control Ordinance, noise measurements in the field are made utilizing a SLM set at A-weighting scale on the “slow mode” meter response, except for impulsive noise (in which case, the SLM is set on “fast mode”). In general, the noise level is measured 4 to 5 feet above the ground, and 10 feet or more from the nearest reflective surface (i.e., walls), where possible.

The following are the basic measurements of noise:

Ambient Noise

Ambient noise is the composite of noise from all sources near and far. In this context, the ambient noise level constitutes the normal or existing level of environmental noise at a given location.

Community Noise Equivalent Level (CNEL)

CNEL is the average equivalent A-weighted sound level during a 24-hour day that is obtained after the addition of 5 decibels to sound levels in the evening, from 7 p.m. to 10 p.m., and after the addition of 10 decibels to sound levels in the evening, from 10 p.m. to 7 a.m. The CNEL metric is used by the California Aeronautics Code for the evaluation of noise impacts at airports. Local compliance with state airport standard requires that community noise levels be expressed in CNEL.

Decibel, dB

A unit measurement describing the amplitude of sound, equal to 20 times the logarithm to the base of 10, or the ratio of the pressure of the sound measured to the reference pressure, which are 20 micropascals.

Impulsive Noise

The noise from impacts or explosions (e.g., from a pile driver), punch press or gunshot. The County Noise Control Ordinance defines impulsive noise as a sound of short duration that is usually less than one second and of high intensity, with an abrupt onset and rapid decay.

Intrusive Noise

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, time of occurrence, tonal or informational content, and the prevailing noise level.

Leq

Leq is the equivalent energy level. The sound level corresponding to a steady state sound level that contains the same total energy as a time varying signal over a given sample period. Leq is typically computed over 1, 8 and 24-hour sample periods.

Day-Night Average Level (Ldn)

Ldn is the average equivalent A-weighted sound level during a 24-hour day that is obtained after the addition of 10 decibels to sound levels in the evening, after 10 p.m. and before 7 a.m. The Ldn represents a simplification of the CNEL measure.

Noise Contours

Lines drawn about a noise source that indicates equal levels of noise exposure.

Pure Tone

A sound that is made up of only one frequency. The County Noise Control Ordinance defines pure tone noise as any sound that can be judged as audible as a single pitch or a set of single pitches.

Statistical Values

Statistical values are statistical methods used to account for the variance in noise levels throughout a given measurement period. L(%) is a way of expressing the noise level that is exceeded for a percentage of time in a given measurement period. For example, the County uses the L50 as a statistical value. Thirty minutes is 50 percent of 60 minutes, so the L50 is the noise level that is equal to or exceeded for 30 minutes in a 60 minute measuring period.

Weighted Level

Weighted level is the sound level in decibels as measured on a sound level meter using the A-weighting filter network. This filter de-emphasizes the very low and very high frequency components of the sound in a manner similar to the response of the human ear, which gives a good correlation with subjective reactions to noise.

III. Federal Guidelines

Table G.1: Federal Guidelines for Acceptable Environmental Noise Levels

Authority and Specified Sound Levels (dBA)	Criteria Objectives
EPA Levels Document (1974)	
55 dBA Ldn outdoors	For the protection of public health and welfare with an adequate margin of safety.
45 dBA Ldn indoors	
Federal Inter-Agency Committee on Noise (FICON)	
65 dBA Ldn outdoors	Generally compatible for residential development.
>65 – 75 dBA	Residential use discouraged.

HUD	
65 dBA Ldn outdoors	Acceptable for housing without special acoustical consideration.
>65 – 75 dBA Ldn outdoors	Normally unacceptable, but acceptable with acoustical sound isolation.
>75 dBA Ldn outdoors	Unacceptable, but acceptable with acoustical isolation and the existence of overriding benefits.
FHWA	
57 dBA Ldn (1H) 60 dBA Ldn (1h) outdoors	Activity category "A": Lands on which serenity and quiet are of extraordinary significance.
67 dBA Ldn (1h) 70 dBA Ldn (1h) outdoors	Activity category "B": Picnic areas, recreation areas, residences, motels, schools, churches, libraries, and hospitals.
72 dBA Ldn (1h) 75 dBA Ldn (1h) outdoors	Activity category "C": Developed lands not in Categories "A" and "B" above.
52 dBA Ldn (1h) outdoors	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals and auditoriums.
FAA	
65 dBA Ldn outdoors	Compatible for residential, public and commercial uses.
>65 – 70 dBA Ldn outdoors	Compatible for commercial building uses. Compatible for public building use with 25 dBA building envelope aircraft noise reduction (NR). Not compatible for residential, but interior acceptable with 25 dBA building envelope NR.
>70 – 75 dBA Ldn outdoors	Compatible for commercial building use with 25 dBA building envelope NR. Compatible for public building use with 30 dBA building envelope aircraft noise reduction (NR). Not compatible for residential, but interior acceptable with 30 dBA building envelope NR.

>75 – 80 dBA Ldn outdoors	Compatible for commercial building use with 30 dBA building envelope NR. Not compatible for public building use. Not compatible for residential, but interior acceptable with 35 dBA building envelope NR.
>80 dBA Ldn outdoors	Not acceptable for commercial, public, or residential use buildings.

IV. Noise Barriers

Noise barriers include any man-made or natural feature that blocks or diminishes sound in its path from the source to the receiver, with concrete block walls and earthen berms being the more common kinds of man-made construction. A noise barrier reduces sound levels by breaking the direct line of sight between the noise source and the receiver. Effectiveness of noise mitigation barriers is primarily a function of height, the location in relation to the sound source and, to a lesser degree, the shape of the edge of the barrier. Since walls have a finite height, sound energy reaches the receptor by bending (diffraction) over the top of any barrier at a reduced intensity. An analysis based on application of the FHWA TNM "Look-up Tables"[13] demonstrates the effectiveness of noise barriers of varying heights at controlling noise from a sample of traffic, consisting of 1,000 automobiles traveling at 60 mph with the receptor at a distance of 100 meters (340 feet). The difference between a "no barrier" scenario and one with a 2 meter-high (6.5 feet) barrier results in an auditory noticeable condition, a decrease of approximately 7 dBA. The noise insertion loss resulting from the installation of a 3-meter high (9.8 feet) barrier is even more dramatic, lowering ambient noise levels by 12 dBA.

Also, the precise location of barriers between the sound source and the receptor plays a pivotal role in sound attenuation. Studies cited by Caltrans indicate that the best results to minimize noise are obtained when the noise barrier is either close to either the sound source or to the receptor. Finally, the shape of barriers has an additional, substantial effect on noise attenuation and sound propagation. Most traffic noise prediction models factor in smooth edges on the noise barriers. However, research has shown that increased noise attenuation can be achieved with jagged edges on the noise barriers to create greater diffraction of the sound path. Results to date show "significant improvement (3-8 dB) for a barrier with a random edge profile compared to one of the same average height with a straight edge."[14]

Noise barriers (sound walls) are the most widely used method of mitigating noise from traffic.

[13] FHWA. Traffic Noise Model, 1998.

[14] "Noise Barriers with Random Edge Profiles", Acoustical Society of America's 129th Meeting, May – June 1995; see "Jagged-edge Noise Barriers" in ICA/ASA 98' Lay Language Papers, June 1998.

Caltrans characterizes noise barriers as the most reasonable noise abatement option available to the State to reduce highway and freeway noise.[15] This is due to barrier insertion being very effective in reducing noise sources that are close to the ground. Also, established land use patterns often pose constraints at the site of many proposed mitigation measures. In other words, there is no available land for any other mitigation technique other than a noise barrier. Thus, construction of noise barriers is limited to those situations where other alternatives, such as open space, do not exist due to the lack of available land or space. Overall, public reaction to highway noise barriers appears to be generally positive, although some residents have argued that aesthetics or view protection values are often sacrificed. In this regard, it should be noted that Caltrans has discovered that vegetation as a factor in noise attenuation does not appear to be significant, and it takes either a considerable depth of plant material or a considerable density of it for any substantial attenuation of sound.

[15] Technical Noise Supplement, Caltrans, October 1998, Section N-6000.

Appendix H: Safety Element Resources

I. Active Faults

Cabrillo Fault

The Cabrillo Fault consists of several en echelon strands striking 20 to 25 degrees west of north and dipping 50 to 75 degrees (Ziony and Yerkes, 1985). The onshore portion of the fault lies on the Palos Verdes Peninsula and extends offshore into the San Pedro Bay.

Cucamonga Fault

The Cucamonga Fault Zone consists of one to three subparallel anastomosing strands of up to one kilometer in width and measuring between 20 and 25 kilometers in length (Morton and Matti, 1987; Wesnousky, 1987; Ziony and Yerkes, 1985). This segment is sometimes referred to as Sierra Madre Fault Segment E. The frontal fault zone in this area strikes about 70 degrees east of north and has moderate to steep northerly dips. Some workers confine this fault zone segment to the frontal southern margin of the San Gabriel and San Bernardino Mountains, from San Antonio Canyon to the west and Lytle Creek to the east (Morton and Matti, 1987; Smith, 1977; Lamar, et al., 1973). Morton and Matti (1987) suggest, however, that because of the complex structural relations at the west end, the Fault could be interpreted to extend farther west and merge with the Sierra Madre Fault System as a through-going, segmented, frontal fault system.

Hollywood Fault

The Hollywood Fault is mapped as a narrow strand that trends along the southern front of the Santa Monica Mountains (Ziony and Yerkes, 1985; Weber, et al., 1980). Ziony and Yerkes (1985) list the fault as having reverse or reverse oblique motion. The eastern segment of the Hollywood Fault Zone trends through the Repetto Hills as a complex series of faults and folds within the Puente Formation. In this area, the fault and several splays are in close proximity to the Raymond Fault (which is an Alquist Priolo-Special Studies Zone, or APSSZ). Physiographic features such as scarps and inclined spurs are interpreted as evidence of Holocene movement along the eastern 17 kilometers of the Hollywood Fault (Ziony and Yerkes, 1985; Weber, et al., 1980). The age of movement along the western portion of the Hollywood Fault is not reported, suggesting the Fault has been inactive for the last 750,000 years.

Holser Fault

The Holser Fault is a south dipping reverse fault consisting of several closely spaced strands that strike from 80 degrees east of north to 70 degrees west of north (Ziony and Yerkes, 1985; Winterer and Durham, 1962). The Fault Zone is as much as 1.5 kilometers wide along its western portion. The portion of the Fault transecting the County is approximately 13 kilometers long.

Ziony and Yerkes (1985) list offset stratigraphy and physiography as clear evidence of Late Quaternary movement. The Fault is shown as active for the following reasons: 1) the Fault is associated with known active faults, accommodating the north-south shortening between the San Cayetano and Santa Susana faults in a complex zone of south-dipping reverse faults (Yeats, 1987; Yeats et al., 1985; Ziony and Jones, 1989; Smith, 1977); 2) the Fault intersects an APSSZ fault; and 3) geomorphic evidence (i.e., drainage control of several streams including Piru Creek) supports a

Holocene, or at least Late Quaternary age for the Holser Fault (Yeats et al, 1985).

Although no Holocene deposits are known, to date, to be displaced by the Fault (Allan Seward, 1990 personal communication), no published trenching program has conclusively shown the Fault Zone to be inactive. Trenching across the APSSZ segment of the San Gabriel Fault may have indirectly proven that the Fault is active, since the San Gabriel Fault may be a reactivated tear fault in the Holser Thrust System (Tom Rockwell, 1990 personal communication).

Llano Fault

The Llano Fault is located west of Victorville in the Mojave Desert. The Fault strikes 65 degrees west of north along a single-strand with a presumed dip to the southwest (Ziony and Yerkes, 1985). The reverse fault shows evidence of Holocene monoclinal folding and is shown as active by Ziony and Jones (1989).

Malibu Coast Fault

The onshore Malibu Coast Fault consists of several subparallel strands trending east-west along the southern margin of the western Santa Monica Mountains. The onshore Fault Zone is comprised of reverse faults with dips averaging between 45 and 80 degrees to the north, with zones of deformation as wide 0.5 kilometers (Ziony and Yerkes, 1985). There is an offshore portion of the Fault merging with the northern strand of the Santa Monica Fault, as interpreted by Weber (1980) and Crook and Ward (1983).

As early as 1965, Wentworth and Yerkes (1965) reported that the fault cut terrace deposits older than 25,000 years. The State fault evaluation conducted in 1977 concluded that the Fault was well-defined, but because no Holocene displacement had been documented, the Fault was not zoned within the APSSZ Act. Such evidence has recently been reported for a portion of the Fault located at the intersection of Kanan Dume Road and Pacific Coast Highway. Converse Consultants, working with Dr. Roy Schlemon, have found evidence of Holocene displacement within colluvial soils determined to be 5,000 to 6,000 years old at this location (oral communication, Greg Rzonak, 1988).

Mission Hills Fault

The Mission Hills Fault trends east-northeast to east-west for 10 kilometers along the south side of Mission Hills. The Fault is expressed by young fault morphology in some instances. The width has been described as a single-strand occurring within a zone as narrow as 150 feet (Ziony and Yerkes, 1985). Smith (1978) has interpreted the age of the Fault as late Pleistocene; however, Slosson (1977) and Kowalewsky (1978) documented Holocene rupture based on evidence of bedrock thrust over Holocene-aged soil. Ziony and Jones (1989) concur with a possible Holocene Age.

Newport-Inglewood Fault Zone

The trace of the Newport-Inglewood Fault Zone is marked by a series of low-lying hills including the Cheviot Hills, Baldwin Hills, Rosecrans Hills, Dominquez Hills, Signal Hill, and Reservoir Hill. These hills are sites of oil fields in which faulted anticlines form structural traps. The Fault Zone consists of a set of left stepping, discontinuous faults, which indicates a through-going right-lateral strike-slip fault at depth. Harding (1973) indicates that the Fault Zone is a nearly-vertical, right-lateral strike-slip fault at depth. The Fault Zone is covered under the APSSZ Act. Five separate en echelon faults comprise the Fault Zone in the County. These faults are as follows (Ziony and Yerkes, 1985):

- **Inglewood:** Northwest-trending fault with stratigraphic evidence of late Quaternary movement and recent physiographic features. Normal to normal-right-oblique sense of movement. Possible source of 1920 earthquake.
- **Potrero:** Northwest trending fault with normal to normal-right-oblique sense of movement with Late Quaternary physiographic features and groundwater impediments along trace in late Quaternary alluvial deposits (Poland and others, 1959). Numerous small earthquakes nearby.
- **Avalon-Compton:** Northwest-trending, vertical fault, which experienced movement in 1941 and 1944. Has reverse-right-oblique sense of movement and Late Quaternary physiographic features and groundwater impediments (Poland and others, 1959).
- **Cherry-Hill:** Northwest-trending near vertical fault with reverse-right-oblique sense of movement. Late Quaternary activity evidenced by offset stratigraphy, physiographic features, and groundwater impediments. Numerous small earthquakes east of trace.
- **Reservoir Hill-Seal Beach:** Northwest-trending, near vertical fault with normal-right-oblique or right-lateral strike-slip sense of movement. Late Quaternary activity is evidenced by offset stratigraphy, physiographic features, and groundwater impediments. Numerous small earthquakes east of trace.

North Hollywood Fault

The North Hollywood Fault, listed as a “possible fault in North Hollywood" by Ziony and Yerkes (1985), dips vertically along a single-strand approximately 2 kilometers in length. This Fault is but one of many groundwater impediments (faults) within the San Fernando Valley; however, Weber, et al., (1980) noted that the Fault formed an ENE-trending, linear break in topography on older quadrangle maps published in 1901 and 1926. Weber (1980) noted that because the south-facing physiographic lineament apparently offset youthful deposits of the Tujunga Wash, the fault may be Holocene in age.

Northridge Hills Fault

The Northridge Hills Fault consists of nine en echelon strands each with zones approximately 0.7 kilometers wide (Ziony and Yerkes, 1985). The Fault Zone strikes 70 to 80 degrees west of north through the central San Fernando Valley. The style of slip is probably reverse, with a dip of 35 degrees north near the surface and 80 degrees north at depth (Ziony and Yerkes, 1985). Several aftershocks of the 1971 San Fernando Earthquake occurred coincident with the subsurface extension of the fault (Ziony and Yerkes, 1985). The Fault has been described as Late Quaternary Age by many workers (Ziony, et al., 1974; Barnhardt and Slosson, 1973; Wentworth and Yerkes, 1971); however, Ziony and Yerkes (1985) have reinterpreted groundwater offset data and fault physiography to suggest possible Holocene Age activity. Additional evidence of activity is the folding and warping of Holocene and Pleistocene Age sediments exposed during trench excavations by George Larson (Jerry Treiman, 1989; personal communication). Ziony and Jones (1989) show the Fault as possibly Holocene.

Palos Verdes Fault Zone

The portion of the Palos Verdes Fault Zone in the County can be discussed in terms of three separate segments: 1) the San Pedro Bay segment, 2) the onshore segment, and 3) the Santa Monica Bay segment (Ziony and Yerkes, 1985*).*

All segments are believed to possess reverse right oblique or reverse motion (Ziony and Yerkes,

1987). The San Pedro Bay segment is characterized as a complex zone of en echelon faults with evidence of offset Holocene stratigraphy (Fischer, et al., 1987). Fischer and others (1987) state that the eastern faults of the zone displace seismic reflectors or horizons that represent Holocene surficial sediments.

The onshore segment of the Palos Verdes Fault Zone is depicted by Ziony and Jones (1989) as Late Quaternary; however, Woodward and Clyde (1983) point to several factors that suggest Holocene displacements have occurred along the Palos Verdes Peninsula. These factors include the extensive deformation of the 120,000 year old terrace and apparent Holocene folding of the Gaffy anticline, a probable drag feature related to movement on the Palos Verdes Fault. This portion of the Fault is considered active despite the lack of unequivocal evidence for Holocene displacement.

The Santa Monica Bay segment is inferred to be a Late Quaternary feature by Ziony and Yerkes, (1985); however, increased seismicity in this offshore area, especially in association with the longest, single coherent strand in Santa Monica Bay, suggests that this segment is active.

Raymond Fault Zone

The Raymond Fault Zone consists of one to three strands, which diverge from the Sierra Madre Fault Zone in the area of Monrovia and trend to South Pasadena. Ziony and Yerkes (1985) indicate that the sense of movement on the Fault is reverse-left-oblique. Crook, et al., (1987) have presented a detailed description of numerous physiographic features that attest to the Fault's recent activity. The most impressive feature is the nearly continuous fault scarp between Monrovia Canyon and Arroyo Seco. The Fault displaces recent alluvium and forms a significant groundwater barrier, which has been the subject of several previous studies.

Numerous trench studies and radiometric dating of exposed sediments has allowed definition of five major seismic events in the last 36,000 to 155,000 years B.P., and an additional three events, which cannot be dated precisely in the last 29,000 years (Crook, et al., 1987). Crook, et al., (1987) infer an average recurrence interval of 3,000 years, with an average vertical displacement of 0.4 meters per event. A maximum credible earthquake of ML6-3/4 can reasonably be assumed if the entire 22 kilometer length of the Fault were to break. Crook, et al., (1987) have also recognized a scarp feature in alluvium on the south side of the Raymond Fault in the South Pasadena area. This Fault, named the York Boulevard Fault, lies outside of the APSSZ, but due to its close proximity, is identified as active.

Redondo Canyon Fault

The Redondo Canyon Fault is presumed to be a single strand, which strikes 80 to 85 degrees east of north as it trends offshore from a point just north of the Palos Verdes Peninsula down Redondo Canyon. The fault length is approximately 13 kilometers and the dip is unknown. Scattered small earthquakes have occurred near the fault trace.

San Andreas Fault Zone

The San Andreas Fault Zone extends from northwest to southeast across the County. Numerous fault related geomorphic features, such as linear troughs are present over much of its length. The sense of displacement on the Fault is right-lateral strike-slip and most faults within the zone are vertical (Ziony and Yerkes, 1985). The California Division of Mines and Geology has completed a multi-year study of the San Andreas Fault through which detailed maps of the Fault Zone and the

geologic units they affect have been compiled (Barrows, 1979; Beeby, 1979; Kahle, 1980; Barrows, et al., 1985).

Activity along the San Andreas Fault Zone has been recorded during historic events, including the Magnitude 7.1, 1989 Lorna Prieta Earthquake, the 1906 Magnitude 8 earthquake in San Francisco, and the 1857 Magnitude 7.9 Fort Tejon event. The segment in the County is one of eight discrete fault segments, with each segment exhibiting a unique character and return period for damaging earthquakes along strike of the more than 1,000 kilometer long fault. The 1857 event is believed to have ruptured the section in County.

Offset stratigraphy of Holocene deposits provides evidence that rupture occurs on the San Andreas Fault at Pallet Creek on the average of every 145 to 200 years (Seih, 1984). This work has given rise to an assessment that the Mojave Segment stands a 30 percent chance of being the origin of a 7.5 Magnitude earthquake by the year 2018 (Davis, et al., 1988).

San Antonio Fault

The San Antonio Fault is not well studied. It is a left-lateral strike slip fault interposed and oblique to the San Andreas and Sierra Madre/Cucamonga Fault Zones. On the basis of seismicity data, Hauksson (in press) has suggested that it may be a northern segment of the San Jose Fault, which has been associated with significant seismicity. However, it is its suspect relationship (tear fault) with the Cucamonga and the Sierra Madre faults, and reports of fault trench evidence showing left-lateral displacement of the Cucamonga Fault by the San Antonio Fault, that suggest the fault should be considered active; at least until detailed investigation proves otherwise.

San Fernando Fault Zone

The San Fernando Fault was not known until February 9, 1971, at which time it ruptured and caused extensive damage in the northern and eastern San Fernando Valley. The San Fernando Fault is comprised of five major reverse-left-oblique en echelon strands that vary in strike from 75 degrees east of north to 70 degrees west of north. The Fault dips 50 degrees north near the surface and shallows to 35 degrees north at depth. The total length is at least 17 kilometers (Ziony and Yerkes, 1985).

The five segments consist of:

- **Reservoir Segment:** Extends from the lower Van Norman reservoir embankment eastward along the east flank of a series of low hills where it meets the Mission Wells segment.
- **Mission Wells Segment:** Located 1.5 kilometers east of Lower Van Norman Lake. Small south facing scarps define the trends of the fault segment. Surface cracks from the 1971 earthquake displayed left lateral offsets (USGS, 1971).
- **Sylmar Segment:** Well-defined zone of fractures that extends from the southern corner of Hubbard Street and Glenoaks Boulevard to south of Lopez Dam. The zone generally ranges from 75 to more than 200 meters in width (USGS, 1971).
- **Tujunga Thrust:** Extends along the base of the hills on the north side of Tujunga Valley eastward into Little Tujunga Canyon.
- **Lake View Segment:** Continuation of Tujunga segment, trends eastward along the low hills from Little Tujunga Wash to Big Tujunga Wash.

These faults were zoned within the APSSZ Act in 1976. It is generally recognized that the eastern

fault segments are structurally related to the Sierra Madre Fault System; however, the structural relationship of the western segment is less well-defined. The western San Fernando segment may have structural ties to the Mission Hills Fault.

San Gabriel Fault

The San Gabriel Fault is reported by Ziony and Yerkes (1985) to consist of a zone of en echelon strands striking 45 to 65 degrees west of north with dips between 50 to 80 degrees toward the north. The Fault displays a complex sense of movement that appears to change from one section of the fault to another (Stitt, 1986). The San Gabriel Fault has been divided by various workers into a number of different segmentation schemes (Ehlig, 1973; Weber, 1979; Ziony and Yerkes, 1985; Stitt, 1986; Wesnousky, 1987).

Recent exploratory subsurface work near Castaic indicates that a portion of the segment cuts Holocene alluvium dated by radiocarbon methods as 8140 ± B.P., 777 ± 60 years B.P., and 3500 ± 250 years B.P. (Cotton, 1986). The State has designated a 10 kilometer portion of the San Gabriel Fault that includes this site as an APSSZ fault. Stitt (1986) has stated that the segment of the San Gabriel Fault to the northwest is apparently not Late Quaternary because the fault is buried by the Plio-Pleistocene Hungry Valley Formation. However, Roquemore, 1989 (personal communication) has submitted evidence for Holocene movement in the Violin Canyon area to the APSSZ fault evaluation program in apparent contradiction to Stitt's (1986) interpretation. In light of this evidence, the active segment of the San Gabriel Fault is extended to Violin Canyon. Ziony and Jones (1989) concur with this interpretation. Segment SG-B is arbitrarily extended to the southeast until the San Gabriel splits into the Dillon and Demille Fault. Weber (1979) notes that the evidence for the recency of faulting becomes less clear-cut at this point. The geomorphic and stratigraphic evidence documented by Weber (1979) still suggests Late Quaternary movement.

Santa Susana Fault

The Santa Susana Fault dips north along the southern flank of the Santa Monica Mountains, extending eastward until it merges with the Sierra Madre Fault System (Yeats, 1987). Wenousky (1986) and Ziony and Yerkes (1985) assign a length of 38 kilometers and 28 kilometers, respectively. The Fault dips 0 to 30 degrees in the near surface, which results in a fault zone width between 0.25 and 1.5 kilometers (Ziony and Yerkes, 1985).

The eastern portion of the Fault experienced reverse-left-oblique sympathetic rupture during the 1971 San Fernando Earthquake (Saul and Weber, 1975). This portion of the Fault has been designated an APSSZ fault. To the west of the APSSZ, in the Porter Ranch area, subsurface trench investigations have revealed minor faults within terrace deposits. No faulting was observed within an overlying fanglomerate that was carbon-dated as 10,010± 580 years y.b.p. (Lung and Weick, 1987). However, massive landsliding and bedding plane faulting have been prevented an unequivocal determinations of the age of faulting for this portion of the fault. Based on this uncertainty, the western portion of the fault is considered active.

Sierra Madre Fault System

The Sierra Madre Fault System lies at the southern base of the San Gabriel Mountains. Ziony and Yerkes (1985) indicate that the Fault System consists of one to five anastomosing strands in a zone as wide as one kilometer. The Fault System has a reverse sense of slip and forms a complex zone with two identified sections. Each section consists of a mechanically coherent salient (Crook, et al.,

1987). These sections extend: 1) from Mount Wilson to Big Tujunga Canyon (14 kilometers); and 2) from Big Tujunga Canyon to Arroyo Seco (17 kilometers). Crook, et al., (1987) estimate a maximum credible earthquake of magnitude (ML) 7 for these segments, and an average recurrence interval between major shocks longer than 5,000 years.

The fault segments in numerous places have juxtaposed basement bedrock over alluvium and dip northerly below the steep topographic front of the San Gabriel Mountains. Barriers to groundwater flow have been cited as evidence of alluvial-buried faults of the Sierra Madre Fault System (Proctor and Kalin, 1965; Shelton, 1955). Offset Holocene deposits are reported along the two segments and have been designated as APSSZ faults. The mechanically distinct segments are designated active. Note that the APSSZ segment is correctly identified as a segment of the Sierra Madre Fault and not as the Mount Lukens Thrust, as described by Smith, 1978.

Verdugo Fault

The Verdugo Fault trends northward along the west flank of the Verdugo Mountains and separates a Precambrian Age basement complex on the east from alluvial and sedimentary Tertiary strata on the west. The Fault consists of multiple strands in a zone 0.5 to 1.0 kilometers in width as evidenced by southwest facing scarps in alluvium in the Burbank area (Ziony and Yerkes, 1985; Weber, et al., 1980). The fault apparently dips 45 to 60 degrees to the northeast and forms groundwater cascades in the alluvium north of the terminus of the Verdugo Mountains. On the north, the Fault may curve westward and join the Mission Hills Fault. To the southeast of the Verdugo Mountains, the Fault becomes less well-defined and shallows in dip as it trends through Verdugo Wash where it apparently connects with the Eagle Rock Fault. Groundwater cascades and surface scarps are evidence of recent activity along the Fault (Weber, et al., 1980).

Whittier Fault Zone

The Whittier Fault Zone consists of one to three subparallel strands in a zone as wide as 1.2 kilometers. The length of the Whittier Fault to the point where it merges with the Elsinore Fault Zone is approximately 45 kilometers; however, Wesnousky (1986) has defined a longer Whittier segment (74 kilometers). The 14 kilometer length within the County strikes 65 to 85 degrees to the northwest and dips 65 to 80 degrees to the north. The sense of movement on the Whittier Fault is believed to be reverse right oblique (Ziony and Yerkes, 1985), or nearly pure right slip (Gath and Rockwell, in press). Evidence of offset Holocene stratigraphy northwest of Brea Canyon in Orange County is recognized by Ziony and Jones (1989); however, these workers interpret the northwesternmost portion of the Whittier Fault in the County as late Quaternary. Gath, et al., (1988) and Leighton, et al., (1987) have uncovered evidence of offset Holocene stratigraphy four kilometers east of the City of Whittier in Arroyo San Miguel near Colima Boulevard. Based on these trench studies, the Fault is considered active along its entire length in the County.

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II. Awareness Floodplain Mapping

The intent of the Awareness Floodplain Mapping project by the California Department of Water Resources (DWR) is to identify all pertinent flood hazard areas by 2015 for areas that are not mapped under the Federal Emergency Management Agency's (FEMA) National Flood Insurance Program (NFIP). The Awareness project will also provide the community and residents with an additional tool in understanding potential flood hazards currently not mapped as a regulated floodplain. The awareness maps identify the 100-year flood hazard areas using approximate assessment procedures. These floodplains will be shown as flood prone areas without specific depths and other flood hazard data. Awareness floodplain maps will be added as they become available.

Figure H.1 identifies the currently mapped Awareness Floodplains for the unincorporated areas mapped in the following USGS quadrangles: Neenach School, Rosamond Lake, Redman, Burnt Peak, Lake Hughes, Del Sur, Lancaster West, Lancaster East, Alpine Butte, Hi Vista, Adobe Mountain, Warm Springs Mountain, Green Valley, Sleepy Valley, Ritter Ridge, Littlerock, Lovejoy Buttes, El Mirage, Newhall, Mint Canyon, Agua Dulce, Acton, Pacifico Mountain, Juniper Hills, Valyermo, Mescal Creek, Oat Mountain, San Fernando, Sunland, Condor Peak, Crystal Lake, Mount San Antonio, Burbank, Mt. Wilson, and Glendora.

For more information, please visit DWR's web site at: http://www.water.ca.gov/floodmgmt/lrafmo/fmb/fes/awareness_floodplain_maps/los_angeles.

Figure H.1: Awareness Floodplain Map

III. Development in Flood Hazard Zones

Figures H.X represent existing and planned developments that are located within the County's flood hazard zones.

Figure H.X: Planned Development in Flood Hazard Zones

IV. Flood Repetitive Loss Sites

As of January 3, 2011, FEMA identified 55 repetitive loss properties located within the unincorporated areas of the County. The County has since reduced this number to 43 repetitive loss properties by clarifying property locations or incorporating flood hazard mitigation measures. The County adopted a Floodplain Management Plan on May 11, 2010 to mitigate the flooding of 35 repetitive loss properties.

For more information on the County's repetitive loss sites, please refer to the County's All-Hazard Mitigation Plan, which is available on the CEO's web site at http://lacoa.org/hazmit.htm.

V. Regulatory Agencies for Flood Management, Protection, and Financial Assistance

Table H.5: Federal, State, and Local Agencies Responsible for Flood Management, Protection, and Financial Assistance

Agency	Type
U.S. Army Corps of Engineers	Federal
Federal Emergency Management Agency	Federal
U.S. Bureau of Reclamation	Federal
Natural Resources Conservation Service	Federal
U.S. Fish and Wildlife Service	Federal
National Marine Fisheries Service	Federal
U.S. Environmental Protection Agency	Federal
U.S. Geological Survey	Federal
U.S. Small Business Administration	Federal

U.S. Department of Housing and Urban Development	Federal
California Department of Water Resources	State
California Water Commission	State
State Water Resources Control Board	State
California Department of Fish and Wildlife	State
State Lands Commission	State
California Emergency Management Agency	State
California Department of Housing and Community Development	State
California Department of Real Estate	State
Los Angeles County Department of Public Works	Local
Los Angeles County Flood Control District	Local
Los Angeles Office of Emergency Management	Local

VI. Historic Wildfires in Los Angeles County

Table H.6: Los Angeles County Wildfire Incident Statistics, 2007-2010

Fire Name	**Year**	**Acres Burned**	**Structures**	
			Damaged	*Destroyed*
Buckweed/ Agua Dulce	2007	38,356	30	43
Canyon	2007	4,500	14	8
Magic	2007	2,824	0	0
Ranch	2007	58,401	2	10
Meadow Ridge	2007	20	0	0
October	2007	100	0	0
Sayre	2008	11,262	0	634

Sesnon	2008	14,703	11	78
Marek	2008	4,824	10	42
Osito	2009	304	0	0
Morris	2009	2,168	0	0
Station	2009	160,577	57	209
Crown	2010	14,000	6	10
Briggs	2010	530	0	0
Totals		**312,569**	**130**	**1,034**

Source: Cal Fire Fire Incident Reports

*Data on structures damaged and destroyed was not available for all wildfires, just for the ones listed above.

Table H.7: Acres Burned in Los Angeles County, 2004-2010

Year	Unincorporated Areas	Other Jurisdictions	All Jurisdictions
2004	34,353.58	361.80	34,715.38
2005	5,221.09	23,834.87	29,055.96
2006	7,355.35	163.66	7,519.01
2007	116,893.76	2,231.35	119,125.11
2008	30,714.17	401.92	31,116.09
2009	162,265.62	870.78	163,136.40
2010	1,513.99	45.02	1,559.01
Totals	**358,317.56**	**27,909.40**	**386,226.96**

Source: Los Angeles County Fire Department, Information Management Section, 2010.

VII. Fire Department Functions

The following provides an overview of applicable functions of the County of Los Angeles Fire Department:

- **Fire Prevention Division:** This Division is responsible for conducting plan checks for building, processes and fire extinguishing systems. The Division coordinates with building and safety officials, federal, state, city and County officials to implement the Building (Wildland-Urban Interface and Chapter 7A) and the County Fire Code, Title 32.

- **Forestry Division**

    - Environmental Review Unit: This unit works with the Department of Regional Planning (DRP) to implement existing environmental ordinances. The unit personnel review all County Oak Tree Permit applications submitted to DRP, and develop recommendations for implementation. Additionally, the unit personnel produce environmental documentation and recommendations, such as non-significant impact documents, negative declarations and mitigation measures consistent with California Environmental Quality Act (CEQA) mandates for construction projects and developments. The County Forester and Fire Warden are also represented on the Subdivision Committee, which advises the Regional Planning Commission and Hearing Examiner (Title 21, Subdivisions, Section 21.12.010).

    - Fuel Modification Unit: This unit provides guidelines and reviews the landscape and irrigation plans submitted by the property owner for approval before construction or remodeling of a structure. The objective of the Fuel Modification Unit is to create the

defensible space necessary for effective fire protection in newly constructed and/or remodeled homes within the Department's Fire Hazard Severity Zones (FHSZ). Fuel modification reduces the radiant and convective heat, and provides valuable defensible space for firefighters to make an effective stand against an approaching fire front. Fuel modification zones are strategically placed as a buffer to open space or areas of natural vegetation and generally would occur surrounding the perimeter of a subdivision, commercial development, or isolated development of a single-family dwelling.

- **Brush Clearance Unit:** The Brush Clearance Program is a joint effort between the Fire Department and the County of Los Angeles Department of Agricultural Commissioner/Weights and Measures, Weed Hazard and Pest Abatement Bureau (Weed Abatement Division). This unified enforcement legally declares both improved and unimproved properties a public nuisance, and where necessary, requires the clearance of hazardous vegetation. The Department's Brush Clearance Unit enforces the Fire Code as it relates to brush clearance on improved parcels, coordinates inspections and compliance efforts with fire station personnel, and provides annual brush clearance training to fire station personnel.

- **The Fire Plan Unit/Fire Safe Councils:** The Fire Plan Unit coordinates countywide projects and provides direction in the planning of pre-fire projects. A list of geographically-specific fire risk reduction projects (operational and proposed) is published annually in the Strategic Fire Plan.

  Fire Safe Councils are grassroots community-based organizations that share the objective of making California's communities less vulnerable to catastrophic wildfire. The Fire Plan Unit supports the fire prevention efforts of the local Fire Safe Councils, assisting with project planning and implementation. Projects include hazardous tree and plant removal and trimming as well as fuel break treatment. The Strategic Fire Plan lists the annual accomplishments of the Fire Plan Unit with regards to the creation of fire suppression defense zones.

VIII. Post-Fire Safety, Recovery and Maintenance

The Fire Department's Forestry Division implements post-fire reforestation projects to create resilient landscapes and restore functioning ecosystems.

Under an implementation program of the Conservation and Natural Resources Element, the Forestry Division will assist the Department of Regional Planning in the preparation of a Native Vegetation Conservation Ordinance that considers standards for the removal of native vegetation and standards for incorporating native vegetation into development projects. Long-term fire protection and restoration plans also incorporate native species habitat needs.

While many wildfires cause minimal damage to the land and pose few threats to the land or people downstream, some fires cause damage that requires special efforts to prevent problems afterwards. Loss of vegetation exposes soil to erosion; water runoff may increase and cause flooding; sediments may move downstream and damage houses or fill reservoirs putting endangered species and community water supplies at risk.

The following are programs at the County for Post-Fire Safety, Recovery, and Maintenance:

- **Coordinated Agency Recovery Effort (C.A.R.E):** During storm season there is an elevated risk of flooding, as well as an increased threat of mud and debris flows, particularly in foothill communities and in communities below recent wildfire burn areas. After the 2009 Station Fire, the Los Angeles County Public Works Department developed the Coordinated Agency Recovery Effort (C.A.R.E.), a multi-agency media and community outreach campaign. C.A.R.E. partners include County Public Works, Sheriff's and Fire Departments, the County Office of Emergency Management, the U.S. Forest Service, U.S. Geological Survey, the National Incident Management Organization, the National Weather Service, the California Department of Transportation (Caltrans), the American Red Cross, and the City of Los Angeles. C.A.R.E. program elements and community resources include a speakers' bureau for community meetings; educational/storm preparation materials; and information on road closures and evacuations, weather forecasts and updates, and links to other emergency response and recovery agencies. In addition, C.A.R.E.'s eNotfiy System allows at-risk residents to register to receive storm-related updates and alerts. More information on C.A.R.E. is available at http://dpw.lacounty.gov/care/.

- **Burned Area Emergency Response (BAER): The BAER** program, administered by the U.S. Forest Service, is designed to determine the need for and to prescribe and implement emergency treatments on federal lands to minimize threats to life or property resulting from the effects of a fire. Reseeding of ground cover with quick-growing or native species, mulching with straw or chipped wood, construction of straw, rock or log dams in small tributaries, and placement of logs to catch sediment on hill slopes are the primary stabilization techniques used. BAER assessment plans and implementation are often a cooperative effort between federal agencies and state, tribal and local forestry and emergency management departments. They are closely coordinated with private landowners. More information about the BAER program is available at http://www.fs.fed.us/biology/watershed/burnareas/index.html.

- **State Emergency Assessments Teams (SEATs): SEATs** are deployed by the California Emergency Management Agency to coordinate assessments of recently burned areas. SEAT members concentrate on addressing the post-fire risk to lives and property that could arise during the coming rainy season. SEAT members identify hazards and subsequent mitigation efforts that could be used to reduce, but not entirely eliminate all risk from the identified hazards. SEAT assessments were completed for the Marek and Sesnon fires in Los Angeles County in 2008. More information about SEAT is available at http://hazardmitigation.calema.ca.gov/state_emergency_assessment_team.

Appendix I: Public Services and Facilities Element Resources

I. Imported Water Sources

Colorado River Aqueduct

To alleviate some of the financial burden of importing water from the Colorado River, Los Angeles and several other cities formed the Metropolitan Water District of Southern California under the California Metropolitan Water District Act of 1927. The 242-mile long Colorado River Aqueduct carries a billion gallons (2,778 acre-feet) of water daily to Southern California. The Los Angeles County relies on the Colorado River Aqueduct for some of its water supply.

California, along with a number of other states, share water that is diverted from the Colorado River. Over the past few decades, California has been utilizing more than its allocation of 4.4 million acre-feet of water annually from the Colorado River. Water agencies throughout California, including the Metropolitan Water District, are implementing programs to reduce water drawn from this source to the initial allocation agreement, through water banking, conservation, and recycling.

State Water Project

Following World War II, the California Legislature approved the Burns-Porter Act, which commits the State to the development of a 440-mile aqueduct system that would bring rainwater and snowmelt from Northern California to Southern California. Since 1972, the State Water Project has delivered water to 29 water agencies along the route, including the Antelope Valley-East Kern Water Agency, Castaic Lake Water Agency, Metropolitan Water District, and the San Gabriel Valley Municipal Water District. The delivery capacity of the State Water Project is currently 2.4 million acre-feet annually, of which water agencies in Los Angeles County are granted a portion, depending on their contract with the State and available supply.

II. Water Suppliers

The following section outlines the water suppliers that serve the unincorporated areas of Los Angeles County:

Antelope Valley-East Kern Water Agency

The Antelope Valley-East Kern Water Agency (AVEK) holds the third largest entitlement to water from the State Water Project; only the Metropolitan Water District and Kern Water Company have higher entitlements. AVEK's district boundaries extend 2400 square miles from the Antelope Valley in Los Angeles County and well into Kern County. Since 1953, AVEK has brought water to major consumers, including farmers and Edwards Air Force Base. AVEK imports 75,000 acre-feet of water into its district annually. However, demand for water in the Antelope Valley is higher than current delivery capacities.

Castaic Lake Water Agency

The Castaic Lake Water Agency (CLWA) monitors groundwater and provides imported water from the State Water Project to four retail water purveyors for distribution in the Santa Clarita Valley: the

Los Angeles County Waterworks District 36, Newhall County Water District, Santa Clarita Water Company, and Valencia Water Company. These agencies collect and maintain data on precipitation, groundwater quality, consumption rates, and surface water delivery throughout the Santa Clarita Valley. The data serves as an indicator of overall water conditions, and is used to project available water supplies and prevent over-drafting of valley groundwater basins.

The Santa Clarita Valley extracts approximately 40 percent of its water supply from groundwater basins. Historically, water use in the Santa Clara Valley was predominantly agricultural. Today, urban development is the primary user, and irrigation demands are expected to continue to decline as the urban areas in the Santa Clarita Valley expand.

Littlerock Creek Irrigation District

The Littlerock Creek Irrigation District (LCID) is a public entity that was created in the late 1880s. LCID was instrumental, along with the Palmdale Water District, in constructing the Littlerock Dam. The completion of Littlerock Dam in 1924 made it possible to store water runoff from the Angeles National Forest.

Metropolitan Water District

The Metropolitan Water District (MWD) serves a vast area of California's southern coast region, from Oxnard to Mexico's border, and supplies water to most of the southern portion of Los Angeles County. It was created in 1928 to develop, store, and distribute water at wholesale rates to its member agencies, who in turn distribute the water to end users. Twenty-seven member agencies contract with MWD and together serve approximately 300 cities and unincorporated communities in Southern California.

The MWD is responsible for purchasing much of Southern California's water from the Colorado River and State Water Project to meet the region's growing demand. The MWD is Southern California's primary water wholesaler, supplying member cities and water districts with approximately two million acre-feet, or 650 billion gallons of water, annually. One acre-foot of water is equivalent to the amount of water covering an acre of land—about the size of a football field—one foot deep.

Palmdale Water District

The Palmdale Water District is one of the oldest water districts in the Antelope Valley. It began in the late 1800s as a water provider for agricultural irrigation. What started as a wooden trestle carrying creek water for farms is now an underground canal feeding Palmdale Lake with water from the Littlerock Dam. Much of this water supplies the expanding urban population in the Antelope Valley. In 1963, the Palmdale Water District began purchasing water from the State Water Project to supplement groundwater and water from Littlerock Dam.

Appendix J: Economic Development Element Resources

I. Industrial Land Analysis

Introduction

This analysis, which was developed in cooperation with the Los Angeles County Community Development Commission (CDC) and the Los Angeles County Economic Development Corporation (LAEDC) in 2008, inventories and analyzes existing industrial land uses, zoning, and policies to inform site-specific policy recommendations. These recommendations have in part informed the development of the General Plan Land Use Policy Map and related policies in the General Plan.

Industrial Land Classifications

For this analysis, industrial lands were classified into the following districts:

- **Employment Protection Districts**: These areas represent economically viable industrial and employment-rich lands, where industrial zoning and industrial land use designations should remain, and where policies to protect industrial land from non-industrial uses should be enforced.

- **Industrial Flex Districts**: These are areas that could allow for development of non-industrial uses and mixed-uses, where appropriate, but also allow light industrial or office/professional uses that are compatible with residential uses. These recommendations may call for a change in land use designation and/or zoning and will be implemented through community-based planning efforts.

- **Industrial Opportunity Areas:** These areas meet the criteria for Employment Protection Districts, and are covered by an existing community-based plan. They should be designated EPD when the community-based plan is updated.

The Industrial Land Analysis includes correction areas within each study area. These correction areas identify individual uses or specific parcels where previous land use decisions have resulted in incompatible land use patterns and require a zone and/or land use change.

This analysis considered industrially-designated and zoned land in the following unincorporated communities:

- Avocado Heights
- Covina Islands
- East Los Angeles
- East Pasadena-East San Gabriel
- Florence-Firestone
- Hacienda Heights
- Lennox
- Lopez Canyon
- North Whittier

- Rancho Dominguez
- Rowland Heights
- South San Jose Islands - South Walnut
- South Whittier - Sunshine Acres
- West Carson
- West Puente Valley
- West Rancho Dominguez - Victoria
- West Whittier - Los Nietos
- Whittier Narrows - South El Monte
- Willowbrook

Methodology

LA PLAN (a subsidiary of LAEDC) staff conducted field surveys of industrial land in select study areas. The field survey considered the following variables:

- Current conditions and use of the industrial site and/or industrial district;
- Current conditions of the land uses adjacent to the industrial site and/or industrial district;
- Development and/or redevelopment activities taking place in the vicinity of the industrial site and/or the industrial district;
- Real estate market data (local industrial vacancy and absorption figures at the time of the study).
- Absorption rate, which is the historical amount of square footage absorbed over a period of time; and
- Utilization and/or “high use” of the land. Utilization can be a comparative term in relation to adjoining uses or simply a matter of the amount of building on a given parcel. For this analysis, many parcels were considered underutilized due to the poor condition of the facilities in an area, with good access and visibility, and with an occasional upgraded industrial facility close by.

The staff also reviewed the sites using GIS and aerial photographs.

Study Areas

Avocado Heights

Avocado Heights consists of five study areas. Nearly all of the industrially-zoned land in Avocado Heights is occupied by operating businesses; however, on many parcels, the utilization of industrial land is low when compared to surrounding industrial land in other local jurisdictions. Avocado Heights presents opportunities for significant rehabilitation to generate cleaner industrial and/or office and professional uses.

Figure J.1: Avocado Heights Study Area 1

Study Area 1: The industrial district in study area 1 runs along Valley Boulevard and contains industrial uses, along with a few supporting commercial businesses. The parcels are adjacent to rehabilitated and high-use industrial parcels in the City of Industry to the south, and the City of La Puente to the north, and a Union Pacific rail line that runs parallel to Valley Boulevard. The existing businesses and the level of industrial activity in the region, in addition to the large parcel sizes, demonstrate the viability of the industrial land. The industrial parcels and uses are not comparable

with the surrounding industrial uses in other local jurisdictions, and incentives for redevelopment and rehabilitation of the industrial parcels in study area 1 are recommended. Additionally, future residential uses should not be allowed in these intensive industrial districts. The mobilehome park should retain its industrial land use designation and zoning.

Recommendation: Employment Protection District

Figure J.2: Avocado Heights Study Area 2

Study Area 2: The current land use is industrial. The parcels are surrounded by high-use industrial parcels in the City of Industry on all sides, except for the residential uses in Avocado Heights, which border the northwest portion of study area 2. The existing businesses and the level of industrial activity in the region, in addition to the large parcel sizes, demonstrate the viability of the industrial land.

Recommendation: Employment Protection District

Figure J.3: Avocado Heights Study Area 3

Study Area 3: The industrial district in study area 3 runs along Valley Boulevard and is bisected by Workman Mill Road to the north. The land use and zoning are industrial, and the majority of the area has industrial uses. The northern, eastern, and western portions of study area 3 house intensive industrial uses in the City of Industry and the City of La Puente. The southern portion contains low-density, single family residential uses in Avocado Heights. Past Workman Mill Road, all of the industrially designated parcels are used for commercial, office, or residential purposes. The existing businesses and the level of industrial activity in the region, in addition to the large parcel sizes, demonstrate the viability of the industrial land. The industrial parcels and uses, such as auto salvage operations, are not comparable with the surrounding industrial uses in other local jurisdictions, and are located adjacent to residential uses. Incentives for redevelopment and rehabilitation of the industrial parcels in study area 3 are recommended.

Recommendation: Employment Protection District

Correction: North of Workman Mill Road, change land use and zoning to commercial and residential,

as appropriate.

Figure J.4: Avocado Heights Study Area 4

Study Area 4: The industrial parcels in study area 4 are shallow and run along Valley Boulevard. To the north of the study area are rehabilitated and high-use industrial parcels in the City of Industry and a Union Pacific rail line. Directly across from Valley Boulevard lies a row of commercial uses backed by low-density, single family residences. The current land uses on the parcels in the study area are industrial. However, the existing businesses and the level of industrial activity are not comparable with the surrounding industrial uses, and the shallow parcel sizes will make it difficult for any future high-use industrial redevelopment. There is opportunity for redevelopment of the study area, as it can house supportive commercial uses for the adjacent, high-employment work sites. Due to its proximity to the rail line and the presence of adjacent industrial uses, residential uses are not recommended in the study area.

Recommendation: Industrial Flex District

Figure J.5: Avocado Heights Study Area 5

Study Area 5: The industrial district in study area 5 lies directly east of the San Gabriel River and the Interstate-605, and is surrounded by intensive industrial uses in the City of Industry. The current uses in the study area are industrial. Businesses have rehabilitated these industrial lands and they stand at a high-use. The large parcel sizes, current use and access to transportation routes demonstrate the viability of the industrial land. The parcels in the northeast corner of the study area are shared with the City of Industry. This can add complications to any future redevelopment of the parcel.

Recommendation: Employment Protection District

Bandini Islands

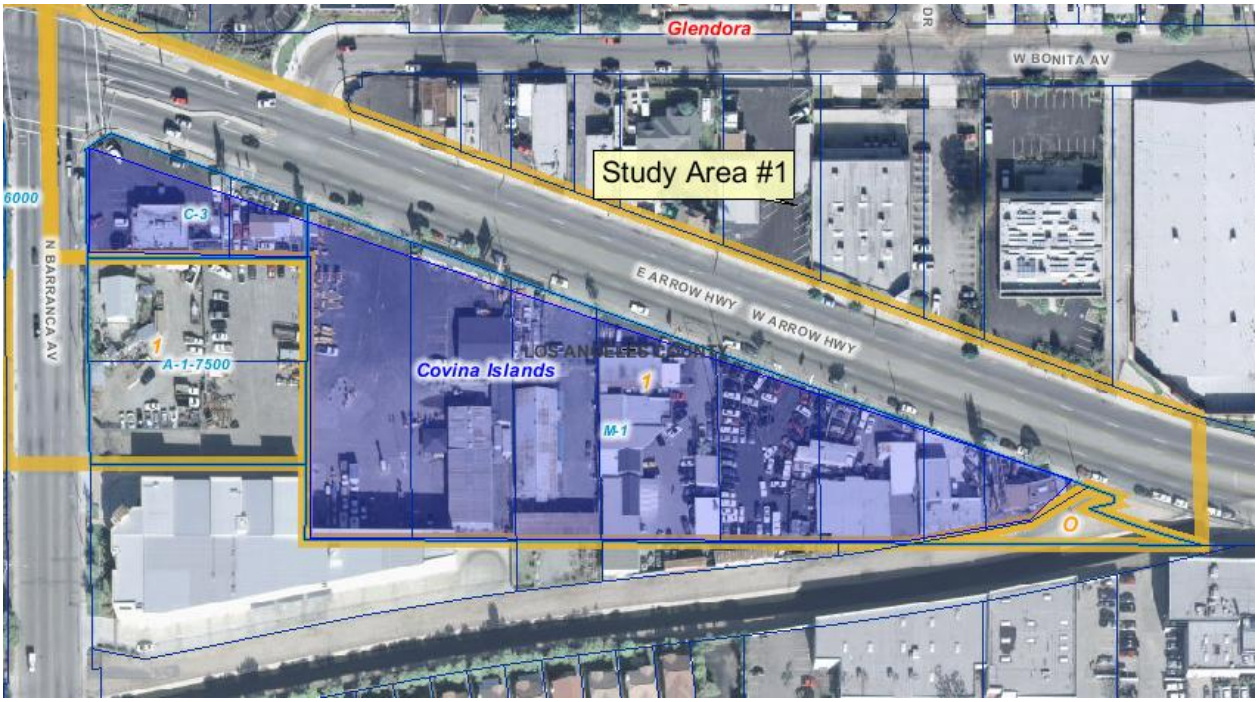
Figure J.6: Bandini Islands Study Area

Study Area: This study area is a small unincorporated island surrounded by high-use industrial parcels in the City of Vernon. The parcels are zoned industrial and used for truck storage for the parcel delivery terminal across the street in the City of Vernon's jurisdiction. Since the study area is part of a bigger industrial hub in the City of Vernon, these parcels should remain industrially zoned.

Recommendation: Employment Protection District

Covina Islands

Figure J.7: Covina Islands Study Area



Study Area: There is one small industrial district in the Covina Islands along Arrow Highway at the intersection of Barranca Avenue. The current uses in the study area are a mix of commercial, light industrial and automobile repair related services. There are highly utilized industrial uses to the east in the City of Glendora, while residential, commercial and public uses surround the study area in other directions. The intersection of Arrow Highway and Barranca Avenue primarily contains commercial and residential uses. There is an inconsistency in the Category 1 (Low Density Residential) land use designation and the M-1 (Light Manufacturing) zoning. Although the current uses in the study area are not employment-rich, the site location makes it ideal for future industrial redevelopment since the San Dimas Wash serves as a buffer to minimize the impacts of industrial uses on the residential uses to the south in the City of Covina.

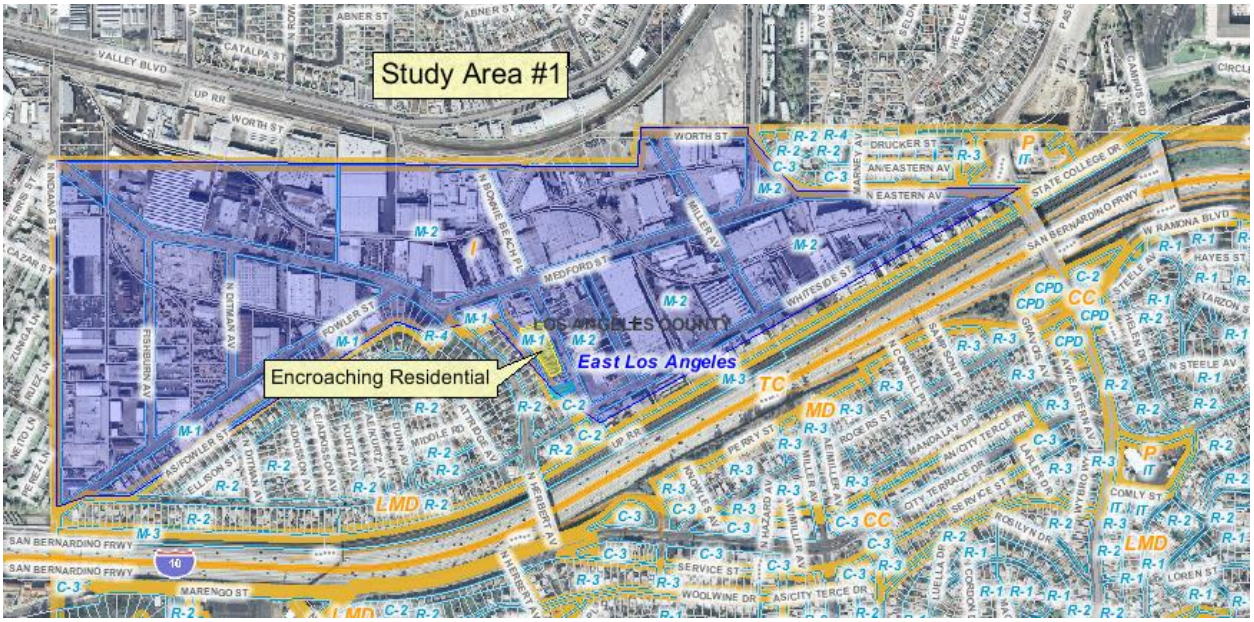
Recommendation: Employment Protection District

Correction: Change the land use designation to Light Industrial.

East Los Angeles

East Los Angeles has two primary areas of industrial activity and several narrow corridors that are zoned CM (Commercial-Manufacturing). The CM-zoned corridors primarily house commercial-based businesses that are interspersed with low-volume, light industrial activity. Both of the industrial districts in East Los Angeles continue to extend outside of the unincorporated area borders. However, in East Los Angeles, the industrial uses, building conditions, and utilization rates vary greatly from surrounding local jurisdictions. As with other industrial districts in the unincorporated areas, residential properties are mixed in and around industrial properties.

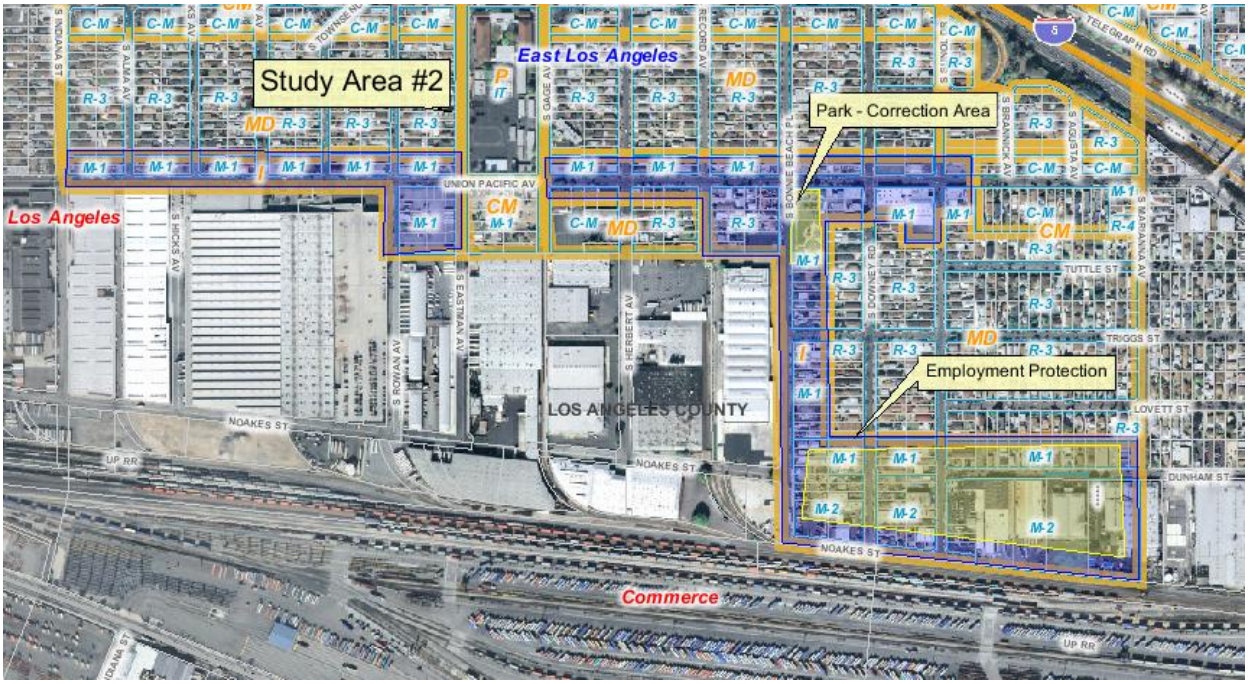
Figure J.8: East Los Angeles Study Area 1



Study Area 1: Study area 1 is the (former) Whiteside Redevelopment Project Area for the County. The current land use in the study area 1 is a combination of light and heavy industrial uses. The study area is prime industrial land and is recommended to be an Industrial Opportunity Area. Between N. Herbert Avenue and Bonnie Beach is a residential pocket that is surrounded by heavy industrial uses. It is recommended that this type of development be prohibited in important industrial districts.

Recommendation: Industrial Opportunity Area

Figure J.9: East Los Angeles Study Area 2



Study Area 2: The industrial district in study area 2 lies directly north of a large railroad yard and rail line, and other heavy industrial properties to the south in the City of Commerce, and is a combination of industrial, commercial, and residential uses. To the east and north, the study area 2 is adjacent to medium-density residential neighborhoods. These industrial parcels are smaller than the adjacent industrial parcels, and their proximity to residential uses inhibits high-volume, heavy industrial uses. A transition to a higher and better use of industrial mixed use and commercial support uses is recommended for this area. The area with larger industrial lots in the southern portion of the study area that is adjacent to the rail yards should be protected for industrial use.

Recommendation: Industrial Opportunity Area in sub-area, with the remaining areas as an Industrial Flex District

Correction: Designate the land use and zone for the park along Bonnie Beach Place as Open Space Parks and Recreation (OS-PR).

East Pasadena - East San Gabriel

Figure J.10: East Pasadena – East San Gabriel Study Area

Study Area: East Pasadena-East San Gabriel has one small industrial district. The study area lies north of a Union Pacific rail line and the City of Rosemead. The adjacent parcels in Rosemead are large-lot industrial uses with some local-serving commercial sites. To the east of the study area is a wide utility transmission corridor. The current uses in the study area are industrial warehousing and food processing businesses. These industrial lands, which are high-use and employment-rich and in close proximity to other job centers, should be protected.

Recommendation: Employment Protection District

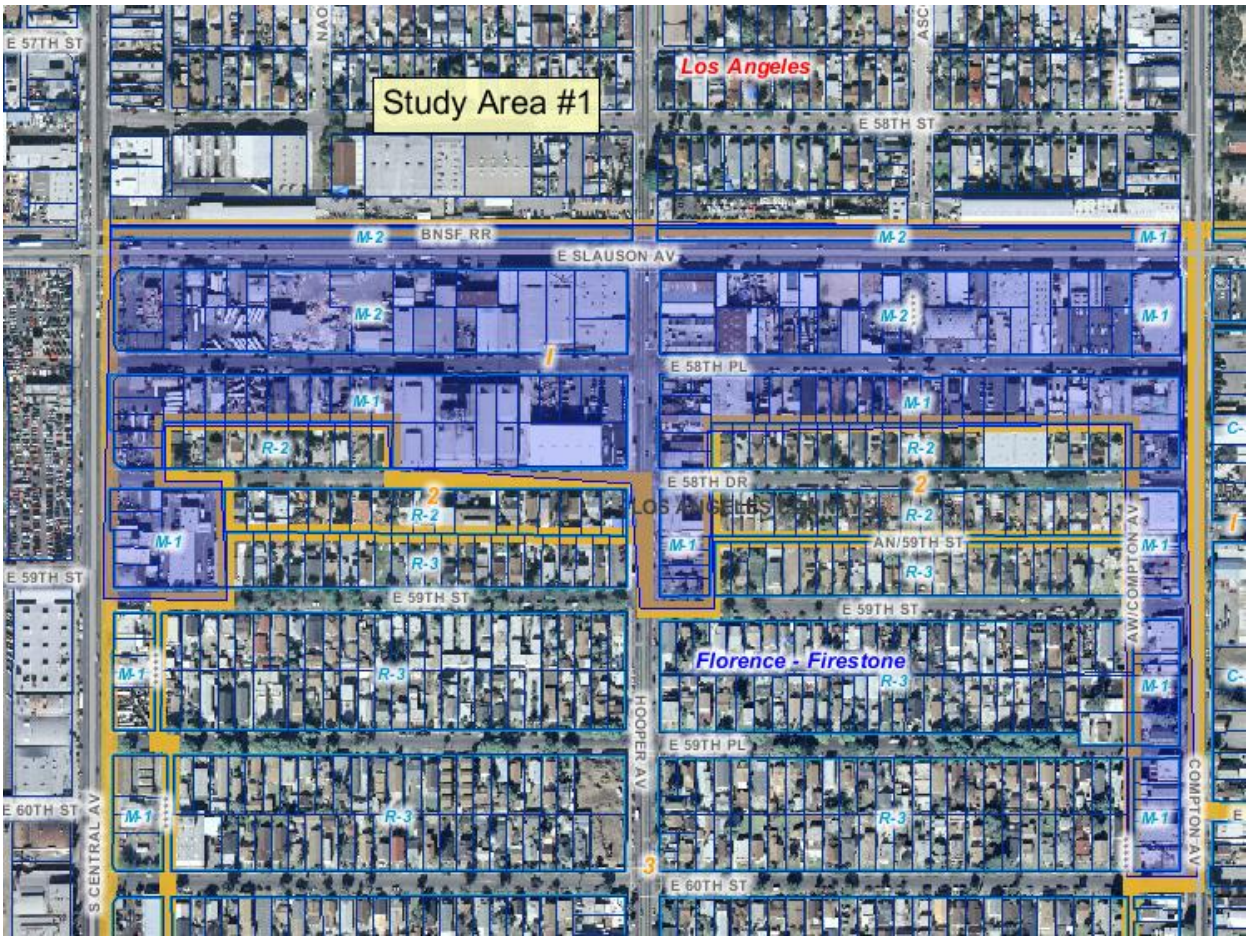
Correction: The study area has a land use designation of Category 1 (Low Density Residential) that should be changed to Light Industrial (IL).

Florence-Firestone

Much of the economic activity in Florence-Firestone is considered local in nature, with services such as recycling, machinery parts and maintenance, and auto uses serving nearby industrial districts and communities. Commercial services and light industrial activities, such as pallet yards and warehousing, are scattered in between single family homes. Because of the prominence and adjacency of lower density residential uses, there are conflicts between noxious uses and housing. Compared to the industrial areas within surrounding cities, the industrial land in Florence-Firestone is less-intense, providing fewer jobs and income opportunities for businesses.

There are several nodes of industrial activity in Florence-Firestone. The areas around the Alameda Corridor, particularly south of Florence Avenue, contain the highest density of industrial employment. Municipal policies along the Alameda Corridor typically support the allocation of adjacent land for industrial uses, both to mitigate environmental hazards to households, as well as to use rail infrastructure to promote economic development activities.

Figure J.11: Florence-Firestone Study Area 1

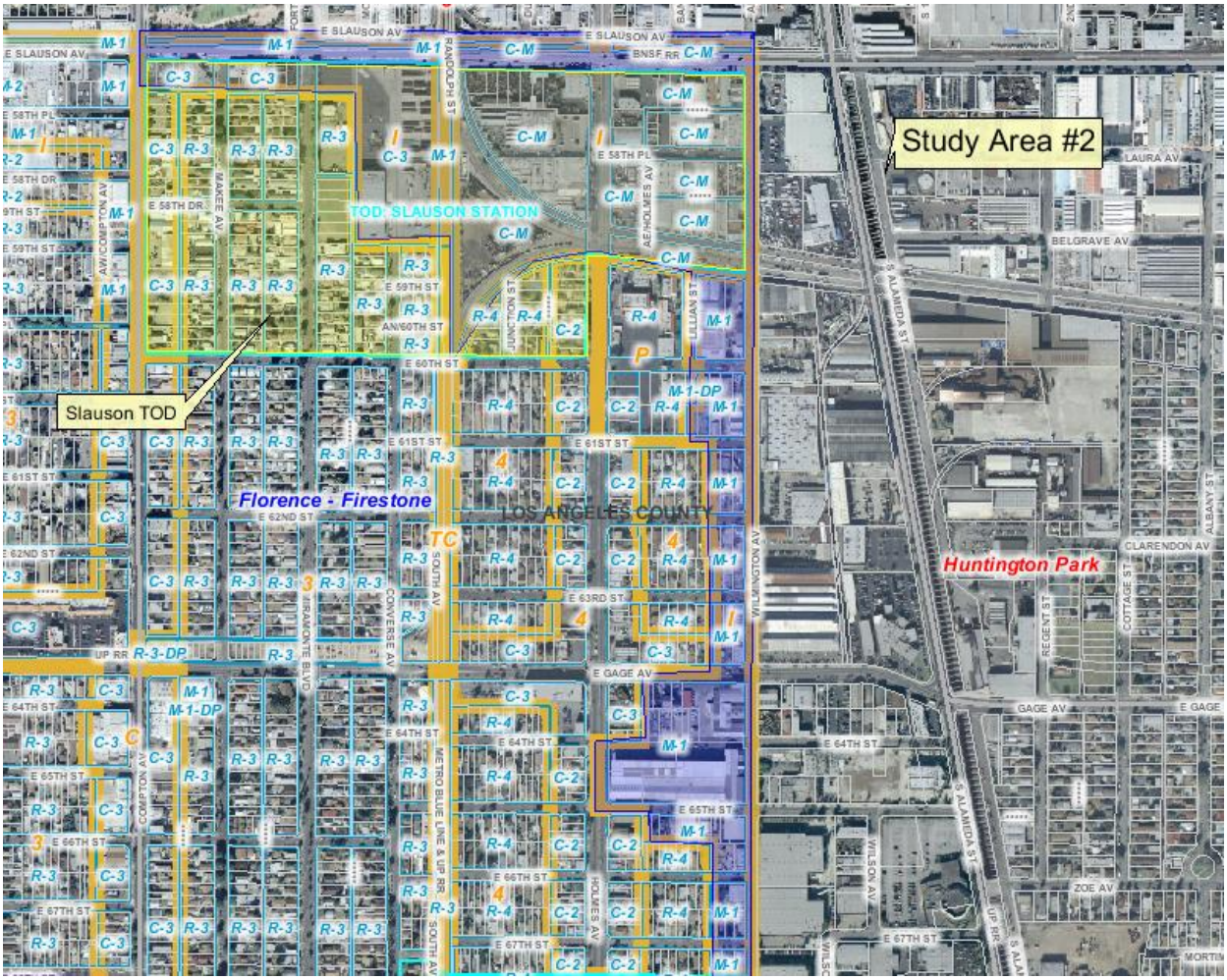


Study Area 1: The existing industrial uses in study area 1 are primarily small businesses on small lots that are directly adjacent to residential areas. The majority of the uses are not employment-rich

businesses—a large number of auto dismantling, recycling and other low-intensity uses exist. The conditions of these structures indicate age and a lack of investment. Across Central Avenue and immediately west of the study area in the City of Los Angeles is a higher-intensity industrial area containing transportation and warehousing activities. To the north of the study area across Slauson Avenue is a combination of residential, commercial and small industrial uses. Slauson Avenue also contains the right-of-way of the Burlington Northern – Santa Fe Railroad, which Metro is studying as a future light-rail transit corridor. Just south of the study area within Florence-Firestone along east 58th Drive, there are a number of residential properties adjacent to industrial uses. There are opportunities to explore the conversion of the study area to allow for office and professional mixed uses, with additional opportunities for redevelopment of underutilized industrial parcels along both Central Avenue and Compton Avenue.

Recommendation: Industrial Flex District

Figure J.12: Florence-Firestone Study Area 2

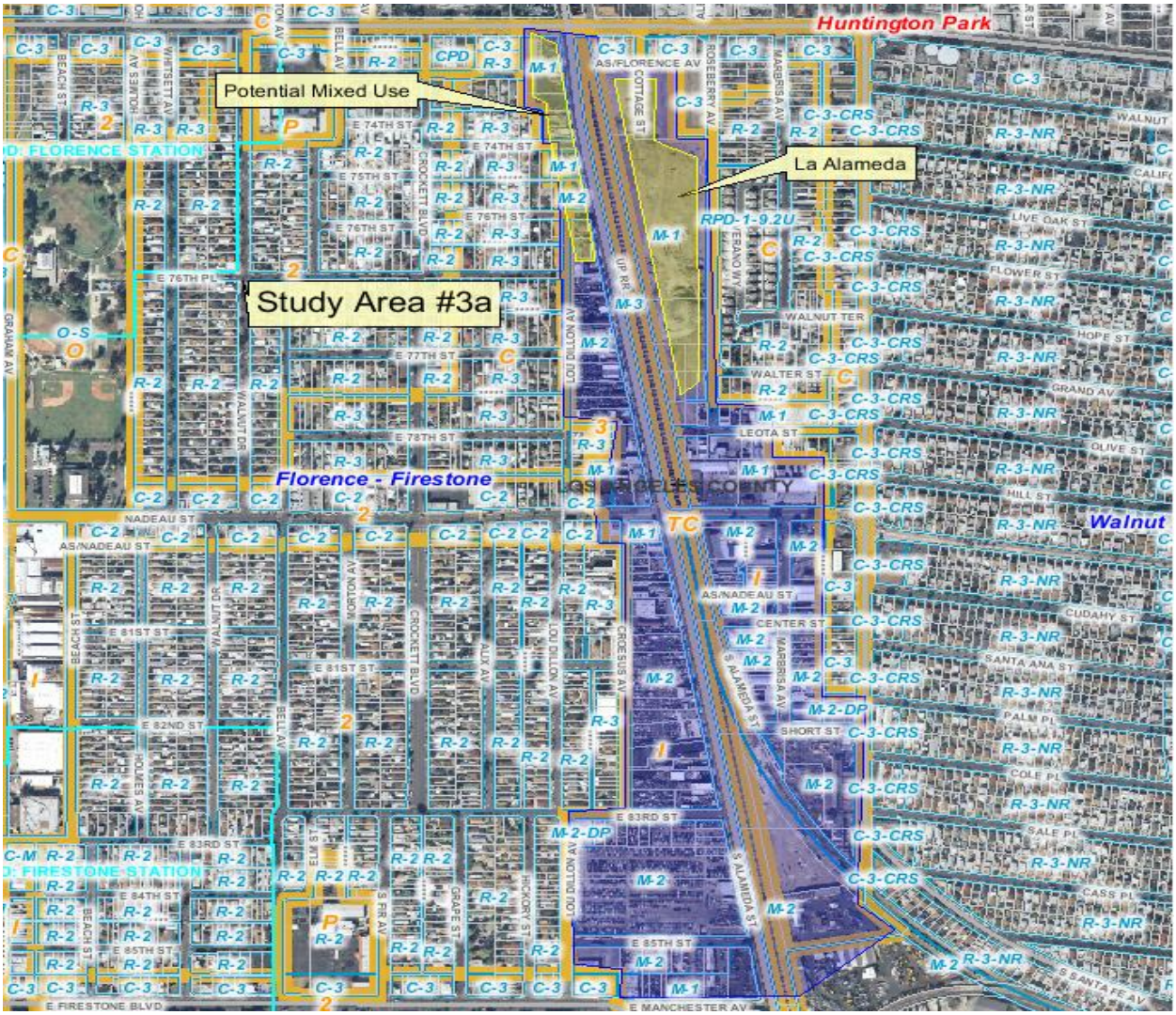


Study Area 2: Study area 2 consists of a mix of heavy and light industrial uses, truck storage, scrap/auto metal dismantling and similar businesses, which are primarily on small parcels. A portion

of the industrial land in the study area is located within the Slauson Station TOD, which is intended to promote mixed uses and increased residential activity around transit nodes. However, there is very little residential or commercial activity currently in the study area or in the TOD. The City of Huntington Park and the Alameda Corridor lie east of the study area across Wilmington Avenue. Both the City and the Alameda Corridor Transportation Authority have policies to encourage industrial activity along the corridor. The City's redevelopment of older warehouses has attracted higher-intensity and employment-rich uses. It is recommended to explore higher uses of land in the study area to support transit-oriented development or the possibility of an industrial TOD.

Recommendation: Industrial Flex District

Figure J.13: Florence-Firestone Study Area 3a

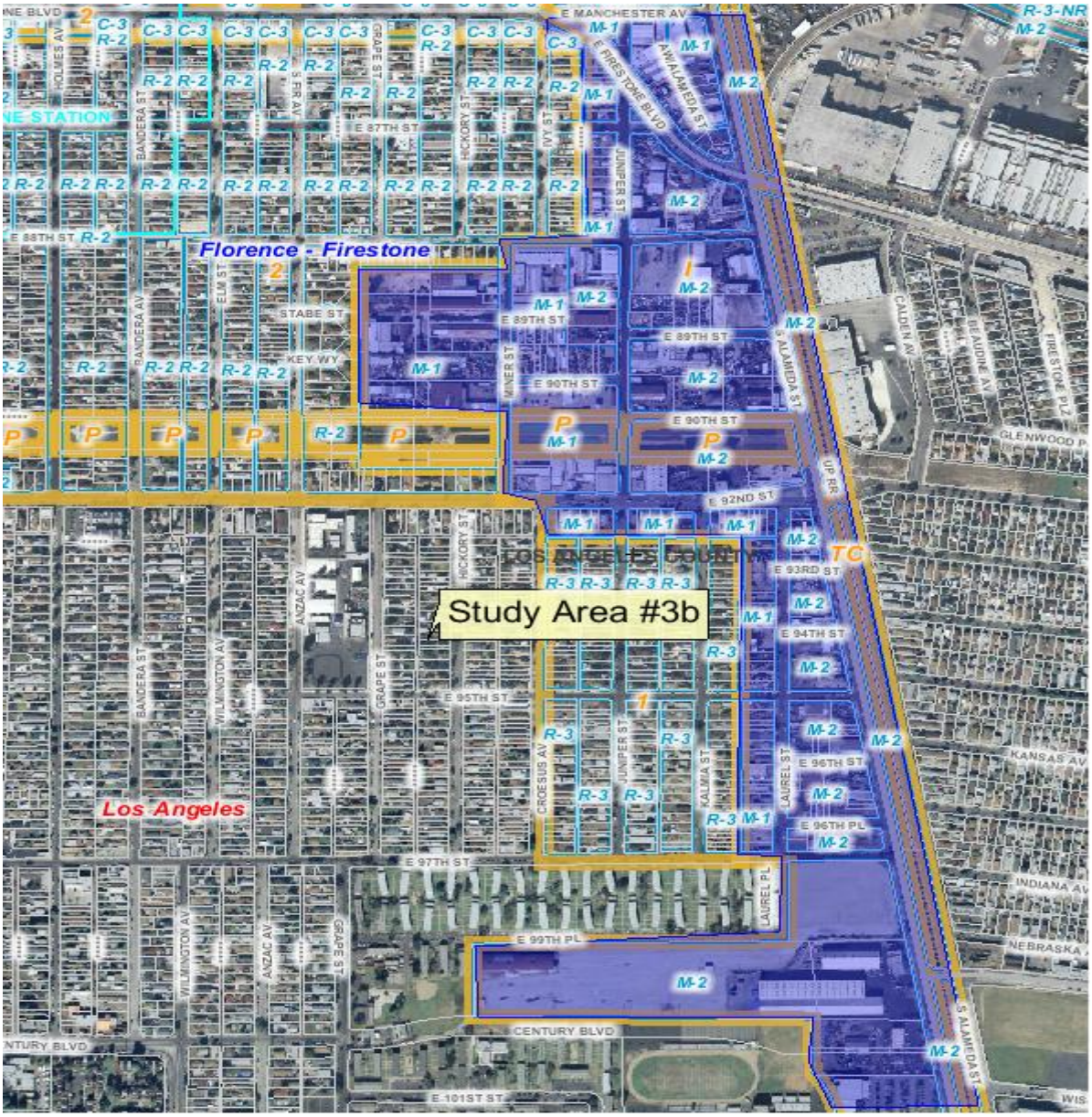


Study Area 3a: Study area 3a is bounded to the north by Florence Avenue. The La Alameda Shopping Center is the result of the conversion of several large industrial parcels into a commercial strip shopping center. This commercial center could provide an anchor to spur redevelopment

activities on surrounding industrial land, although the further conversion of other large industrial properties in the area to commercial uses is not recommended. The study area runs along the Alameda Corridor. The study area contains valuable, viable industrial land in proximity to transit, as well as adjacency to rehabilitated industrial land in the City of South Gate. The industrial uses across from the La Alameda Shopping Center are small, shallow parcels that consist primarily of auto dismantling businesses directly adjacent to residential neighborhoods. South of Nadeau Street, the industrial lands on both sides of Alameda Street offer greater opportunity for industrial redevelopment due to the larger size of the underutilized parcels. The existing industrial uses in the study area are low intensity development.

Recommendation: Industrial Flex District across from the La Alameda Shopping Center, with the remaining areas as an Employment Protection District.

Figure J.14: Florence-Firestone Study Area 3b



Study Area 3b: Study area 3b lies between E. Manchester Avenue/Firestone Boulevard to the north and E. 103rd Street to the south, and continues along Alameda Street and the Alameda Corridor. The study area provides immediate development opportunities because of its proximity to Interstate-105, the size of the parcels, and the distance from residential uses. The industrial parcels and uses are not comparable with the surrounding industrial uses in other local jurisdictions, and are characterized by auto dismantling and metal scrapping businesses. Incentives for redevelopment and rehabilitation of the industrial parcels in the study area are recommended.

Recommendation: Employment Protection District

Figure J.15: Florence-Firestone Study Area 4

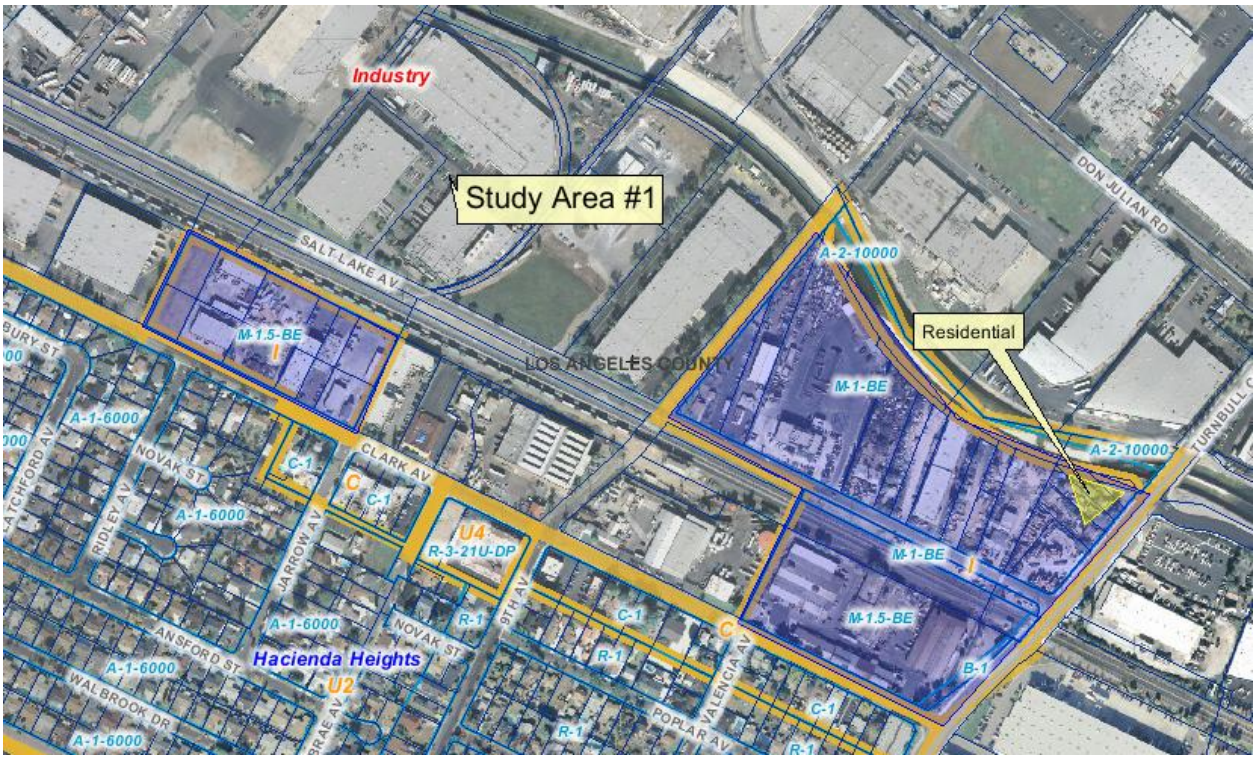
Figure J.16: Florence-Firestone Study Area 5

Study Areas 4 and 5: Study areas 4 and 5 lie along the Metro Blue Line transit corridor, and both are adjacent to parks and residential uses. The majority of uses in the study areas are industrial or commercial-manufacturing related. However, due to their proximity to transit, existing residential uses, and TODs, it is recommended that opportunities for transition to mixed-uses and other higher potential uses be considered.

Recommendation: Industrial Flex Districts

Hacienda Heights

Figure J.17: Hacienda Heights Study Area



Study Area: Hacienda Heights has one industrial area that lies adjacent to heavily industrialized districts in the City of Industry to the north. To the south of the study area lies a strip of neighborhood commercial uses that is backed by residential neighborhoods. The Hacienda Heights industrial parcels are being fully utilized for industrial purposes, except for a few residential properties in the northeast corner of the area. These parcels should remain industrially zoned.

Recommendation: Industrial Opportunity Area

Lennox

Figure J.18: Lennox Study Area

Study Area: Lennox has one long industrial area that is separated from the rest of the community by Interstate-405. It lies adjacent to other highly industrialized uses that are directly adjacent to LAX. The northern portion of the study area contains one large industrially designated parcel that is used

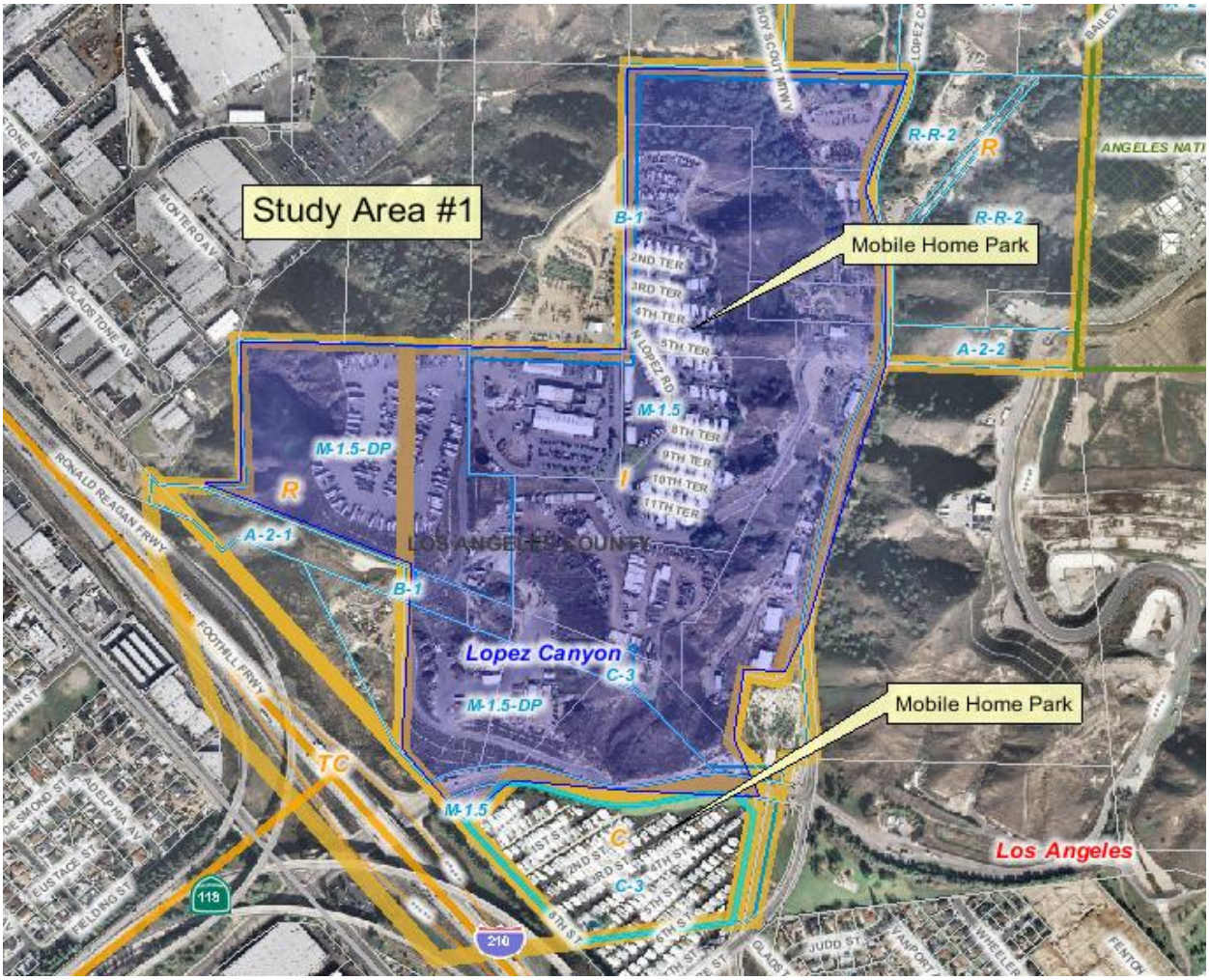
for public storage, a hotel, and some residential units. Public storage is a high-intensity use of land that is not employment-rich. Large-scale public storage uses are not recommended for industrial districts. Due to the proximity to the freeway and to the LAX landing strips, it is recommended that further residential uses not be allowed and that the study area be protected for long-term industrial uses.

Recommendation: Employment Protection District

Correction: The northern portion of study area, from W. 104th Street to Century Boulevard, should be redesignated with commercial and residential land use designations, as appropriate. There is also one area west of the freeway that has an Industrial (I) land use designation, but contains a residential use that should be corrected.

Lopez Canyon

Figure J.19: Lopez Canyon Study Area



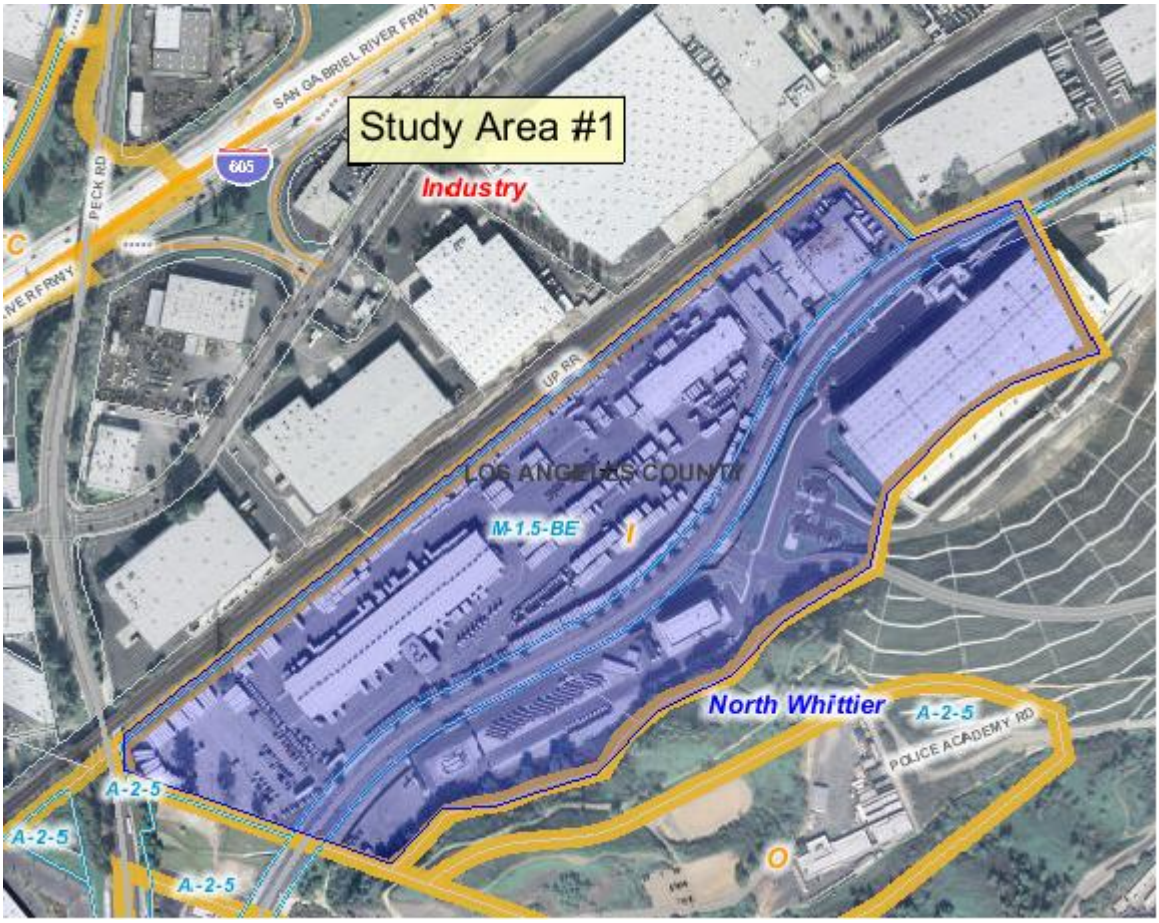
Study Area: The study area in Lopez Canyon lies directly north of Interstate-210 on sloping hills that lead into the Angeles National Forest. The majority of the southern portion of the study area is surrounded by industrial uses in the City of Los Angeles. Between the study area and Interstate-210 is a parcel designated Commercial (C), which is a large mobilehome park, and in the middle of the industrial district is another mobilehome park. The industrial parcels and uses are not comparable with the surrounding industrial uses in the City of Los Angeles, and the hilly terrain precludes large-scale residential development. The western portion of the study area has a land use designation of Rural (R) with an M-1.5 DP (Restricted Heavy Manufacturing) zone.

Recommendation: Employment Protection District

Correction: Change the Rural (R) land use designation to Light Industrial (IL).

North Whittier

Figure J.20: North Whittier Study Area 1



Study Area 1: The industrial district in North Whittier lies directly southeast of the Interstate-605 and high-level industrial uses in the City of Industry. The Puente Hills Landfill lies directly south of the study area. The existing industrial uses in the study area are rehabilitated, and are surrounded by other industrial uses and a rail line.

Recommendation: Employment Protection District

Figure J.21: North Whittier Study Area 2

Study Area 2: Study area 2 only contains two parcels, which are part of the construction equipment sale and rental business located on the adjacent parcels in the City of Industry. Interstate-605 also separates these parcels from the residential areas to the west.

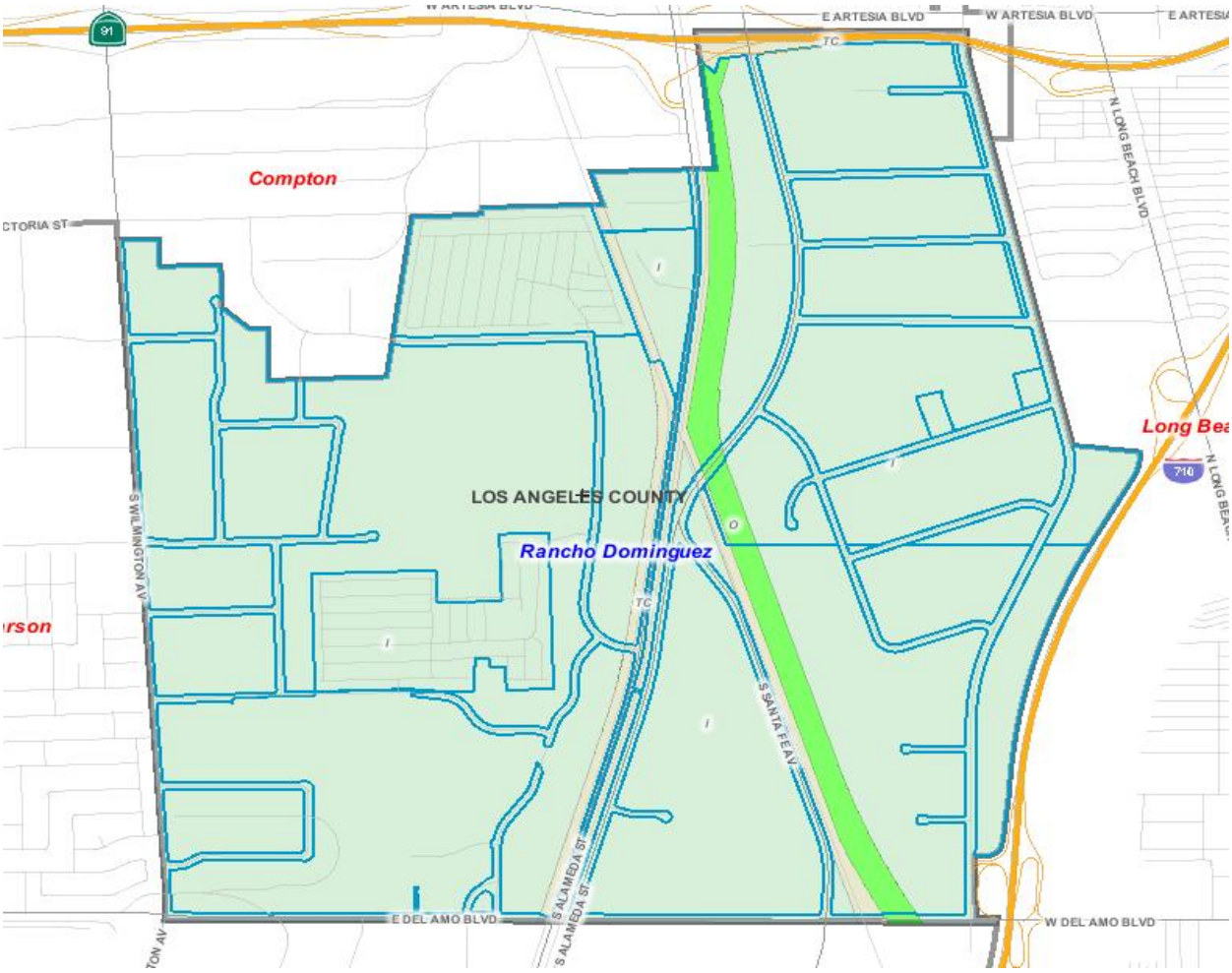
Recommendation: Employment Protection District

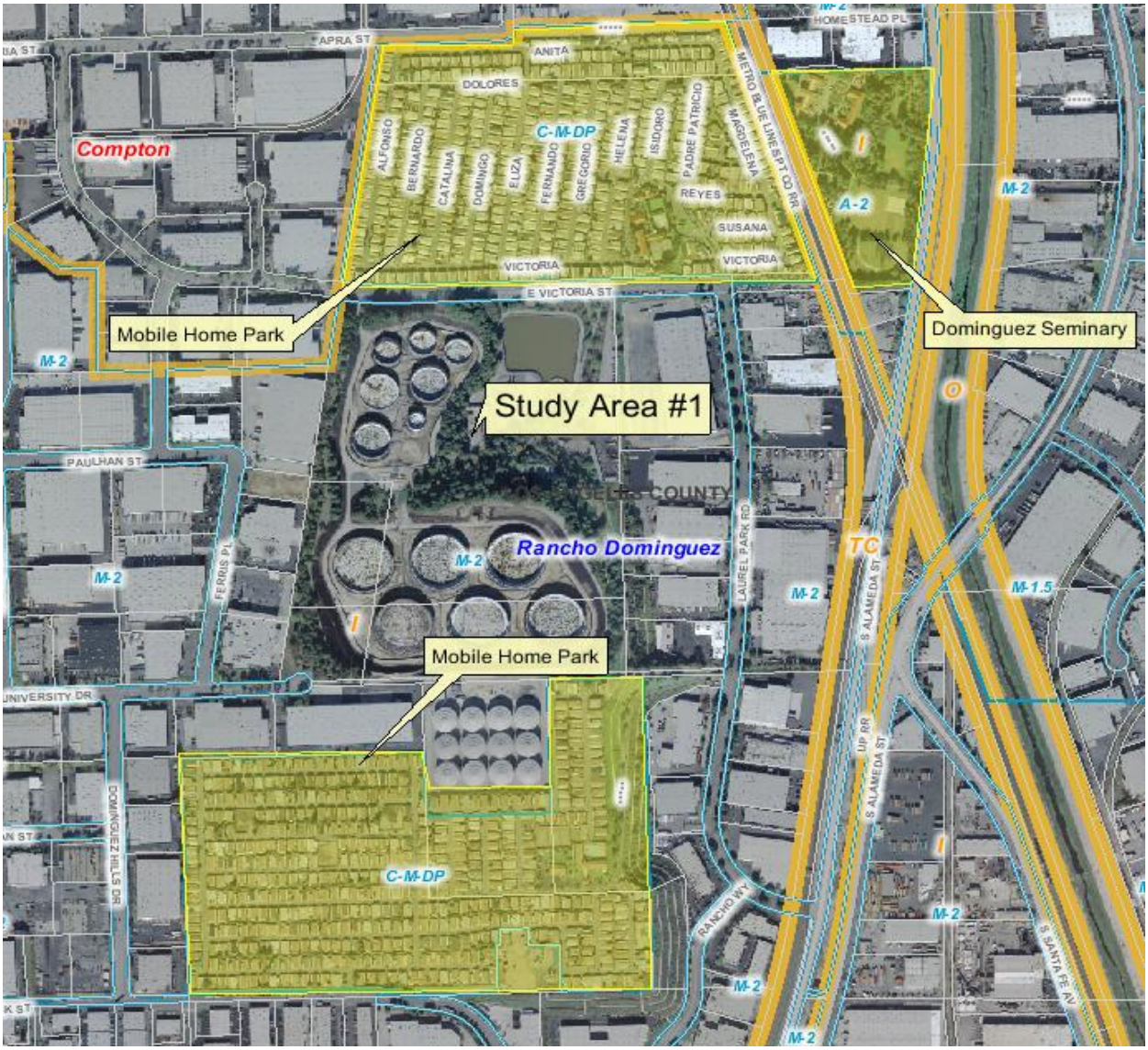
Correction: Change the land use designation and zoning to industrial.

Rancho Dominguez

Rancho Dominguez is a highly industrialized and employment-rich area, with direct access to the ports of Los Angeles and Long Beach, the Alameda Corridor, and the Interstate-710.

Figure J.22: Rancho Dominguez Study Area



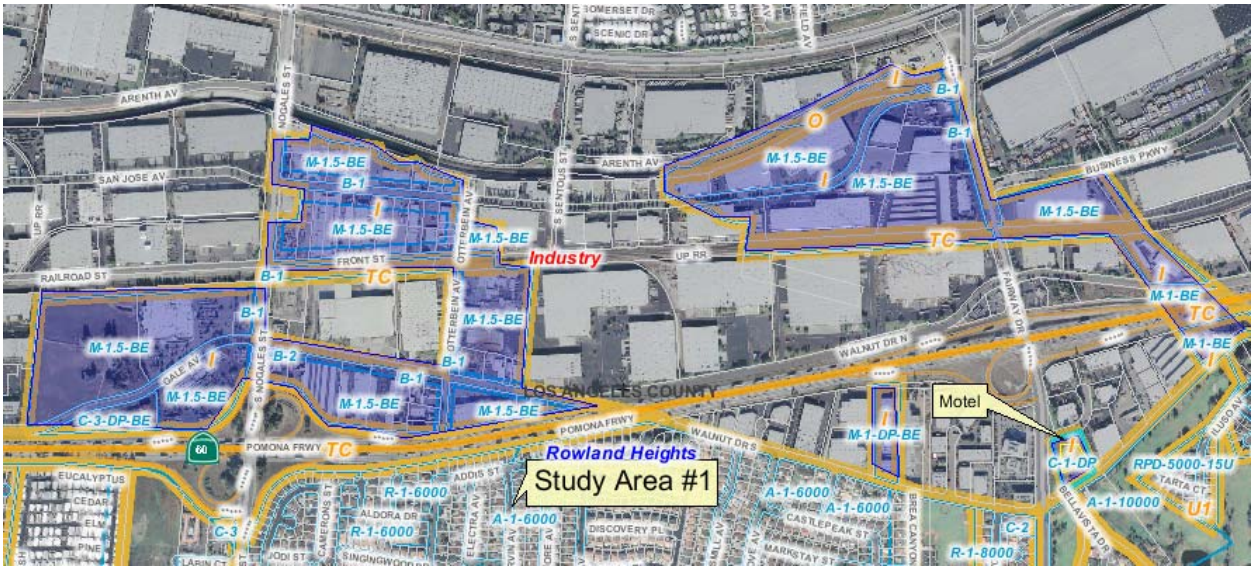


Study Area: The majority of the existing industrial uses in the study area are rehabilitated. However, there are a number of industrial parcels that could be rehabilitated for higher and better uses. This is important industrial land that is employment-rich and important on a regional economic scale. All efforts should be made to preserve the viability of the industrial land in Rancho Dominguez. Of concern are two major mobilehome parks and a historical seminary/museum that are entirely surrounded by heavy and light industrial uses. It is recommended that future projects of this nature not be allowed in these areas and that opportunities for relocation of the mobilehome parks are pursued.

Recommendation: Employment Protection District

Rowland Heights

Figure J.23: Rowland Heights Study Area



Study Area: The study area is being fully utilized for industrial purposes. The one exception is a motel sitting on an industrial parcel as noted on the map above with a C-1-DP (Restricted Business) zone. The properties surrounding the industrial parcels in Rowland Heights are similarly heavy industrial. The study area has access to State Route-60 and to a Union Pacific rail line. State Route-60 also provides a wide buffer from the residential uses in Rowland Heights. This is viable industrial land that should be protected.

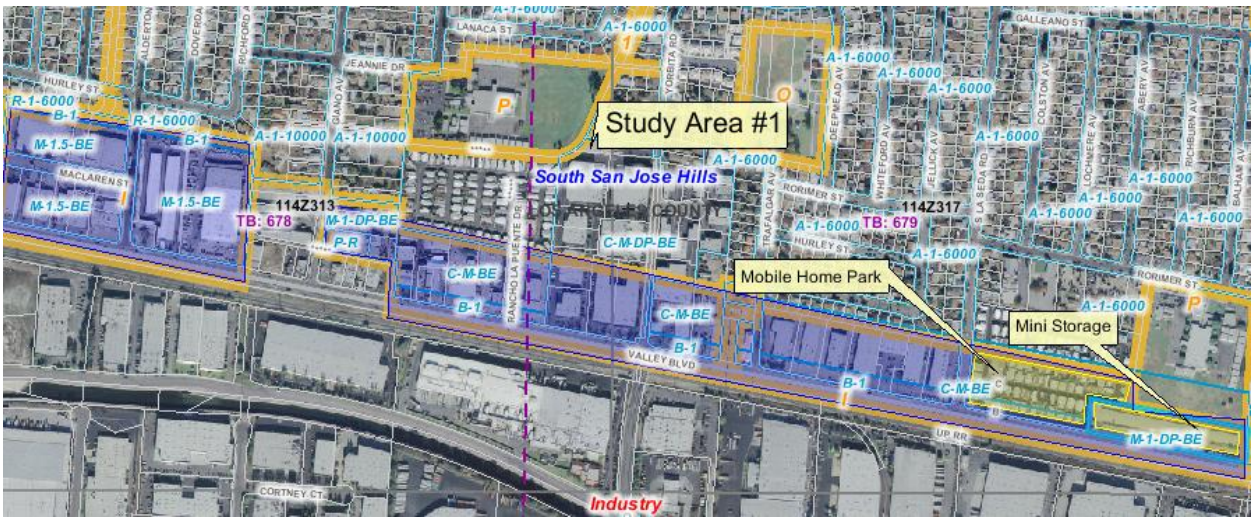
Recommendation: Industrial Opportunity Area

Correction: Change motel parcel to a commercial land use.

South San Jose Hills – South Walnut

South San Jose Hills–South Walnut contains two study areas. Both areas stretch along Valley Boulevard and contain a mix of commercial and industrial uses.

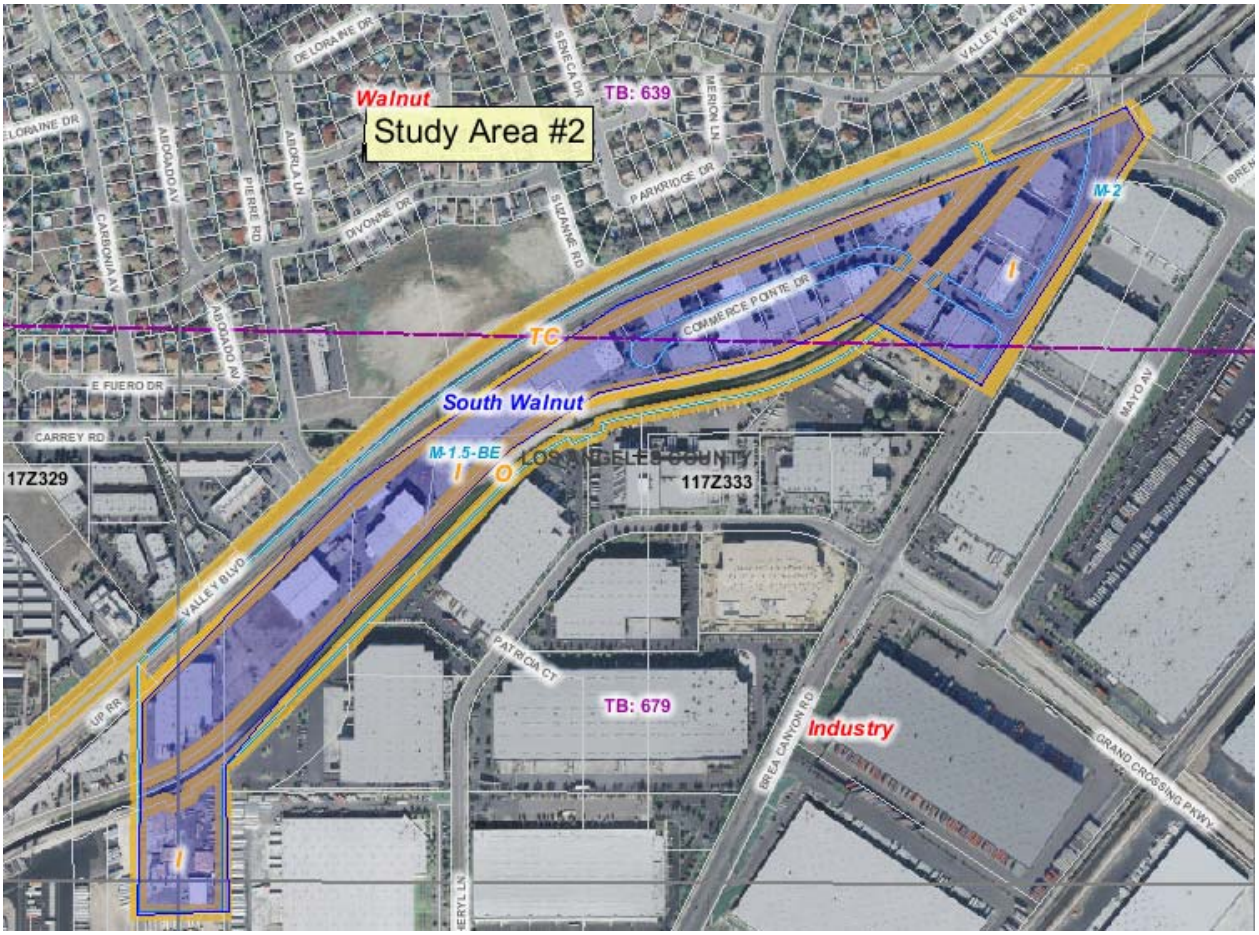
Figure J.24: South San Jose Hills – South Walnut Study Area 1



Study Area 1: The study area stretches along Valley Boulevard and is bordered to the north by low to medium density residential neighborhoods, and to the south by heavily industrialized parcels in the City of Industry. Much of the study area is zoned for C-M (Commercial Manufacturing), which allows for less intensive industrial uses. There are a number of parcels that have converted to other uses, including a large mobilehome park, a large storage facility, and a church, which suggest a trend in the encroachment of non-industrial uses into the southeast portion of the study area.

Recommendation: Employment Protection District

Figure J.25: South San Jose Hills – South Walnut Study Area 2



Study Area 2: Study area 2 in South Walnut is an industrial district that stretches along Valley Boulevard and is bordered to the north by low to medium density residential neighborhoods in the City of Walnut, and to the south by heavily industrialized parcels in the City of Industry. The parcels in the study area are high-use, valuable industrial lands that are well-buffered from adjacent residential uses.

Recommendation: Employment Protection District

Figure J.26: South San Jose Hills – South Walnut Study Area 3

Study Area 3: Study area 3 in South Walnut is a small piece of an unincorporated parcel, which is part of an industrial park in the City of Walnut.

Recommendation: Employment Protection District

Correction: Rezone the parcel to industrial.

Figure J.27: South San Jose Hills – South Walnut Study Area 4

Study Area 4: Study area 4 in South Walnut stretches along Valley Boulevard and is bordered to the south by heavily industrialized parcels in the City of Industry. These parcels are currently used for auto body and towing services. They are well-buffered from the residential uses to the north in the City of Walnut.

Recommendation: Employment Protection District

Corrections: Rezone some parcels in the study area from A-2-5 (Heavy Agricultural) to industrial.

Figure J.28: South San Jose Hills – South Walnut Study Area 5

Study Area 5: Study area 5 in South Walnut is an industrial district surrounded by high-use industrial parcels in the City of Industry on all sides. The uses in the study area are industrial, warehousing, or manufacturing related.

Recommendation: Employment Protection District

South Whittier – Sunshine Acres

Figure J.29: South Whittier – Sunshine Acres Study Area 1

Study Area 1: Study area 1 is an industrial district that is located at the intersection of Florence/Mill Avenues and Telegraph Road and is surrounded by residential and commercial uses on all sides. The majority of parcels in the study area have already been converted to commercial or commercial/office uses. The land use designation of Category 1 (Low Density Residential) is also inconsistent with the M-1 (Light Manufacturing) zoning designation.

Correction: Change land use designations to commercial.

Figure J.30: South Whittier – Sunshine Acres Study Area 2

Study Area 2: Study area 2 in South Whittier–Sunshine Acres is located along the Imperial Highway and lies directly north of high-use industrial parcels in the City of Santa Fe Springs. Residential uses and a few commercial parcels lie within the study area, and to the north, northeast and northwest of the study area. There are inconsistencies between the Category 1 land use designation (Low Density Residential) and many of the parcels zoned M-1 (Light Manufacturing). There is a mix of light industrial uses and auto related businesses on the M-1 and commercially-zoned parcels, and their proximity to the large-scale industrial uses to the south demonstrate the viability of the industrial land. It is recommended that the industrial uses be supported, and efforts be made to rehabilitate these parcels to be compatible with the higher-use industrial activities to the south.

Recommendation: Employment Protection District

Correction: Change all industrial parcels to Light Industrial (IL) land use designation. Change the zoning for the residential parcel north of Leffingwell Road to R-1 (Single Family Residential). Change commercial zoning to light industrial zoning.

West Carson

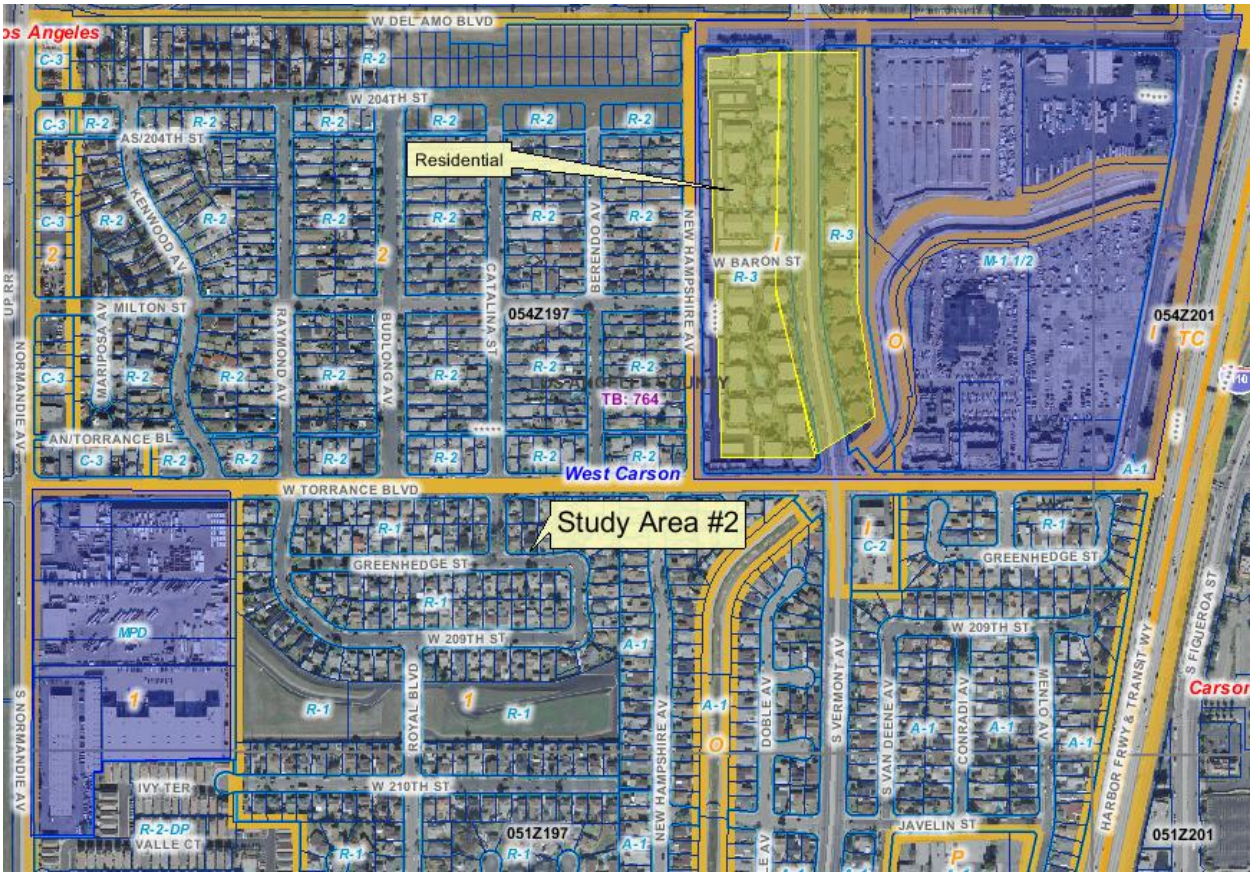
There are several, diverse industrial districts located throughout West Carson. The proximity to the Interstate-110 and Interstate-405 and to the industrial corridor leading out of the ports of Los Angeles and Long Beach present West Carson with a number of opportunities and challenges. The Los Angeles County Harbor-UCLA Medical Center complex in the heart of West Carson also provides an anchor for future development and redevelopment activities.

Figure J.31: West Carson Study Area 1

Study Area 1: Study area 1 lies south of Interstate-405, west of Interstate-110 and north of Del Amo Boulevard. The non-contiguous industrial parcels in the study area are heavily industrialized and surrounded by similar industrial uses. These are viable, employment-rich industrial lands with access to freeways.

Recommendation: Employment Protection District

Figure J.32: West Carson Study Area 2



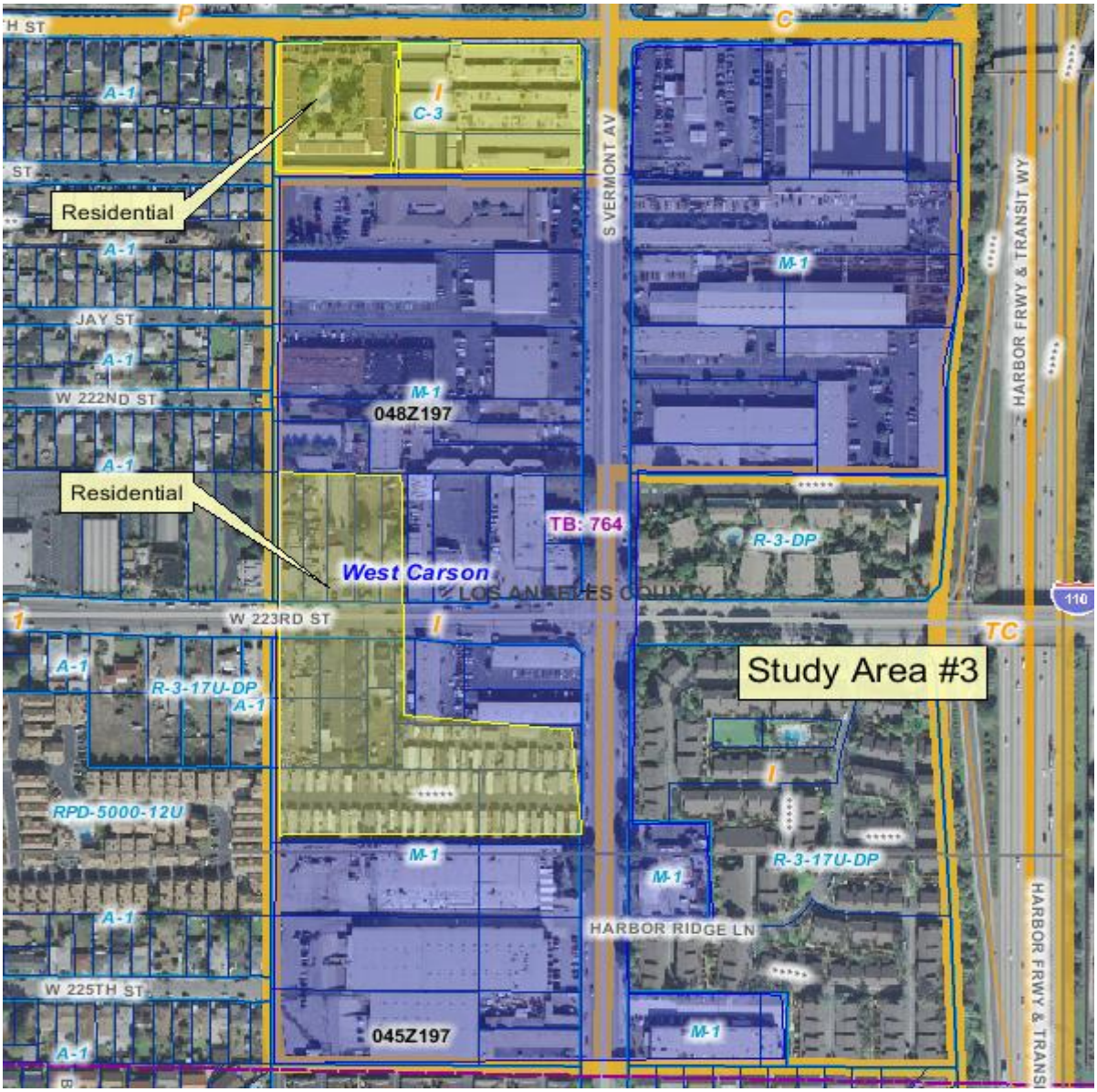
Study Area 2: There are two non-contiguous industrial areas in study area 2. The one south of West Del Amo Boulevard and east of New Hampshire Avenue consists of a large, high-density residential project, a shopping center, and a large industrial parcel currently used for self storage and boat and vehicle storage. For the high-density residential project, the land use is Industrial (I), and the zoning is R-3 (Limited Multiple Residential). This area should be redesignated as residential. The shopping center currently has an industrial land use designation (I) and an industrial zoning (M-1½). This area should be redesignated and rezoned to commercial. The remaining large industrial parcel, due to its large size and relatively good condition, should be protected. Also, there is one small industrial block with a C-2 (Neighborhood Business) zone south of Torrance Boulevard that is currently a gas station and store.

The industrial parcels south of West Torrance Boulevard and east of South Normandie Avenue are large in size and in relatively good condition. However, they are surrounded by residential developments to the east, south and west in the City of Los Angeles, and by commercial and residential uses to the north. While this area should be designated industrial to reflect the existing industrial uses, further studies should be conducted to assess future opportunities of converting these parcels into residential uses.

Recommendation: Employment Protection District and Industrial Flex District

Correction: Redesignate residential projects to residential (H30). Rezone the shopping center to commercial with a commercial land use designation. Also, change the parcels with C-2 (Neighborhood Business) zoning south of Torrance Boulevard to commercial land use designations. The land use designation for the industrial parcels along Normandie Avenue should be changed from Category 1 (Low Density Residential) to an industrial land use designation.

Figure J.33: West Carson Study Area 3



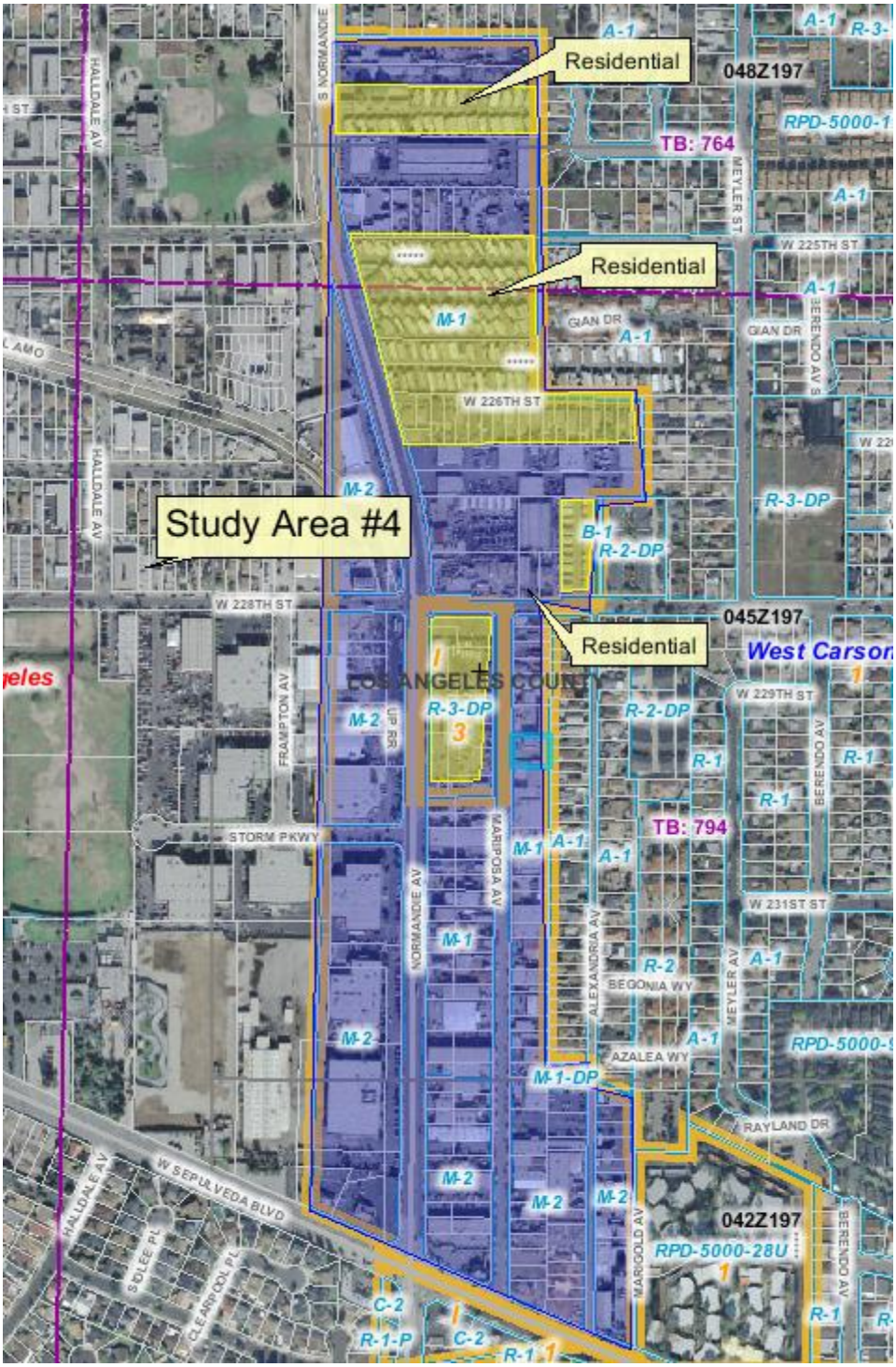
Study Area 3: Study area 3 has seen a significant amount of land conversions, from industrial to residential uses. There are also commercial uses dispersed throughout the study area on industrially zoned parcels. The existing industrial uses are viable and in relatively good condition. However, the study area is in close proximity to the Harbor-UCLA Medical Center complex and is seeing a significant amount of large-scale residential development. There are major opportunities in this area for mixed-use development, including light industrial or research/support uses for the medical center.

Recommendation: Industrial Flex District

Correction: Change parcels with an Industrial (I) land use designation, which have been converted to

other uses, to a residential land use designation (H18 and H30).

Figure J.34: West Carson Study Area 4



Study Area 4: Study area 4 has also seen a significant amount of industrial land converted to residential uses, and these are recommended to be Industrial Flex Districts. One project has created

a residential island in the middle of the entire industrial district. It is recommended that residential projects surrounded by industrial land not be allowed in the future. There are several automotive wreckage and other types of businesses in the northern portion of the study area, and the new townhome project in the middle of this district could be a good reason to attempt some rehabilitation of underutilized properties. Along both sides of Normandie Avenue in the southern portion of the study area, the industrial uses that remain are viable and in relatively good condition, and are adjacent to industrial parcels in the City of Los Angeles.

Recommendation: Employment Protection District and Industrial Flex District

Figure J.35: West Carson Study Area 5

Study Area 5: Study area 5 is a long industrial district between Vermont Avenue and Interstate-110. It lies adjacent to heavy industrial uses across the freeway in the City of Carson. The study area has good access to the freeway and is close to the ports of Long Beach and Los Angeles. The industrial uses that are in the northern portion of the study area are viable and in relatively good condition. The southern portion of the study area has large industrial parcels that are currently underutilized.

Recommendation: Employment Protection District

West Puente Valley

Figure J.36: West Puente Valley Study Area 1

Study Area 1: The one industrial district in West Puente Valley is fully occupied and used for industrial purposes. The adjacent property within the unincorporated area is residential. The adjacent properties that are not in the unincorporated area contain a school, large industrial businesses, and an open air flea market that is also used as a drive-in theater. There is an inconsistency between the Category 1 (Low Density Residential) land use designation and the M 1.5 (Light Manufacturing) zones.

Recommendation: Employment Protection District

Correction: Change the land use designation to Light Industrial (IL).

Figure J.37: West Puente Valley Study Area 2

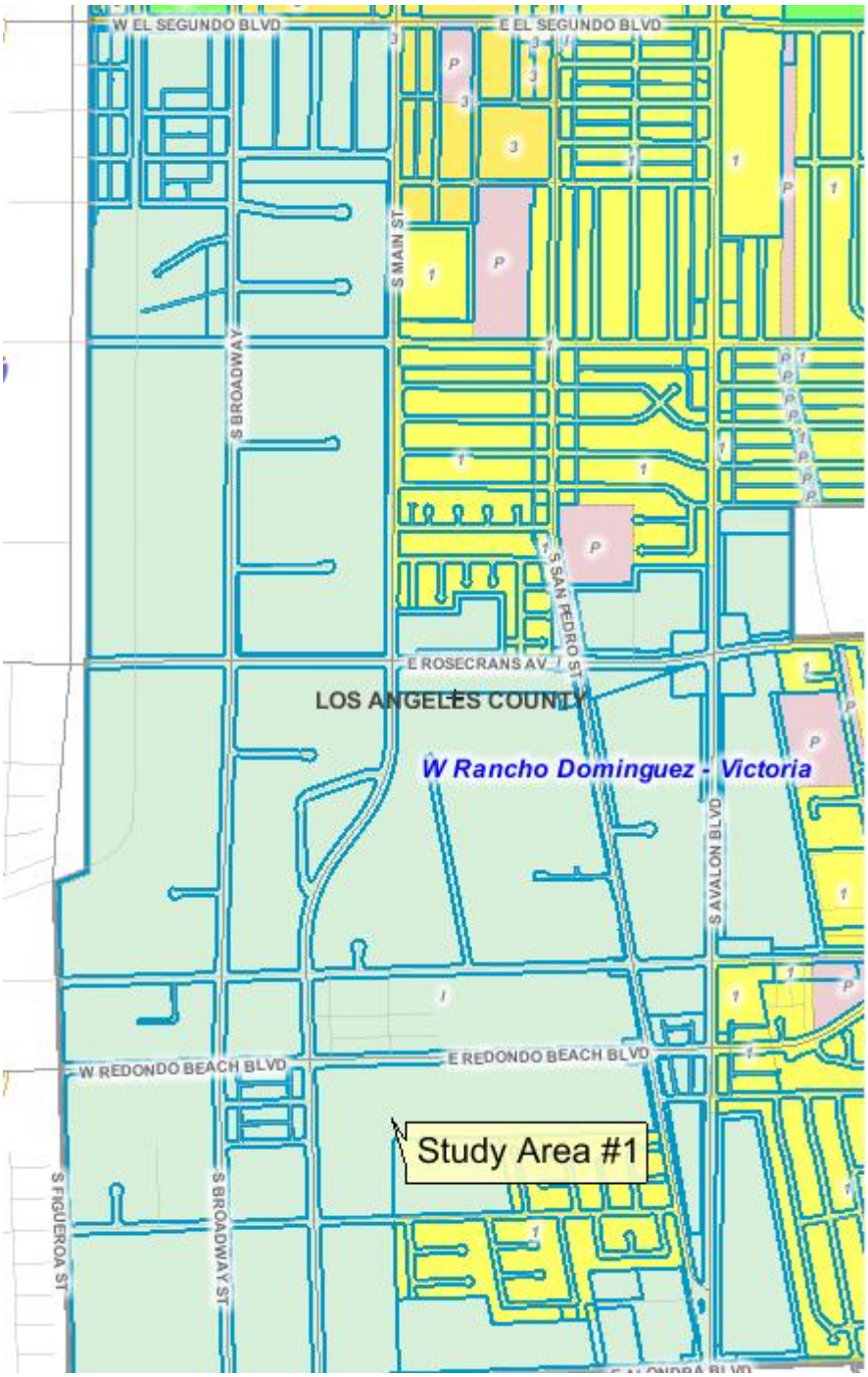
Study Area 2: Study area 2 in West Puente Valley is one isolated unincorporated parcel, which is part of a warehousing facility in the industrial district in the City of Baldwin Park.

Recommendation: Employment Protection District

Correction: Change the land use designation and zoning to industrial.

West Rancho Dominguez - Victoria

Figure J.38: West Rancho Dominguez – Victoria Study Area



Study Area: West Rancho Dominguez-Victoria has a large industrial district with a variety of facilities, in varying degrees of usage and conditions. The size and density of the area, the large industrial parcels, and its proximity to adjacent industrial districts shows that the industrial area is viable and should be protected. There is one residential project in the study area that is surrounded by heavy and light industrial uses. Future projects of this nature should be restricted in this area.

Recommendation: Employment Protection District

West Whittier – Los Nietos

Figure J.39: West Whittier – Los Nietos Study Area 1

Study Area 1: The industrial district in West Whittier–Los Nietos is fully utilized for industrial purposes. Across Washington Boulevard is another high-use industrial district. Residential uses surround the rest of study area 1. Rehabilitation could be beneficial for some structures, especially those near adjacent residential uses, and the industrial section between Chatfield Avenue and Sorenson Avenue has some residential pockets. The existing industrial uses are viable and are appropriate for the area. There are some plan and zone inconsistencies between the Category 1 (Low Residential Density) land use designation and the industrial zoning.

Recommendation: Employment Protection District

Correction: Change land use designation to Light Industrial (IL)

Figure J.40: West Whittier – Los Nietos Study Area 2

Study Area 2: Study area 2 lies just north of Whittier Boulevard between Interstate-605 to the east and the San Gabriel River to the west. The two residential areas need to be redesignated from Industrial (I) to single family residential (H9).

Correction: Change land use designation to single family residential (H9).

Figure J.41: West Whittier – Los Nietos Study Area 3

Study Area 3: Although the current uses in study area 3 are a mix of commercial, light industrial and single family residences, the study area is currently zoned Light Industrial (M-1-BE) and is bordered to the east and south by heavily industrialized parcels in the City of Santa Fe Springs.

Recommendation: Employment Protection District

Correction: Change all parcels to Light Industrial (IL) land use designation.

Whittier Narrows / South El Monte

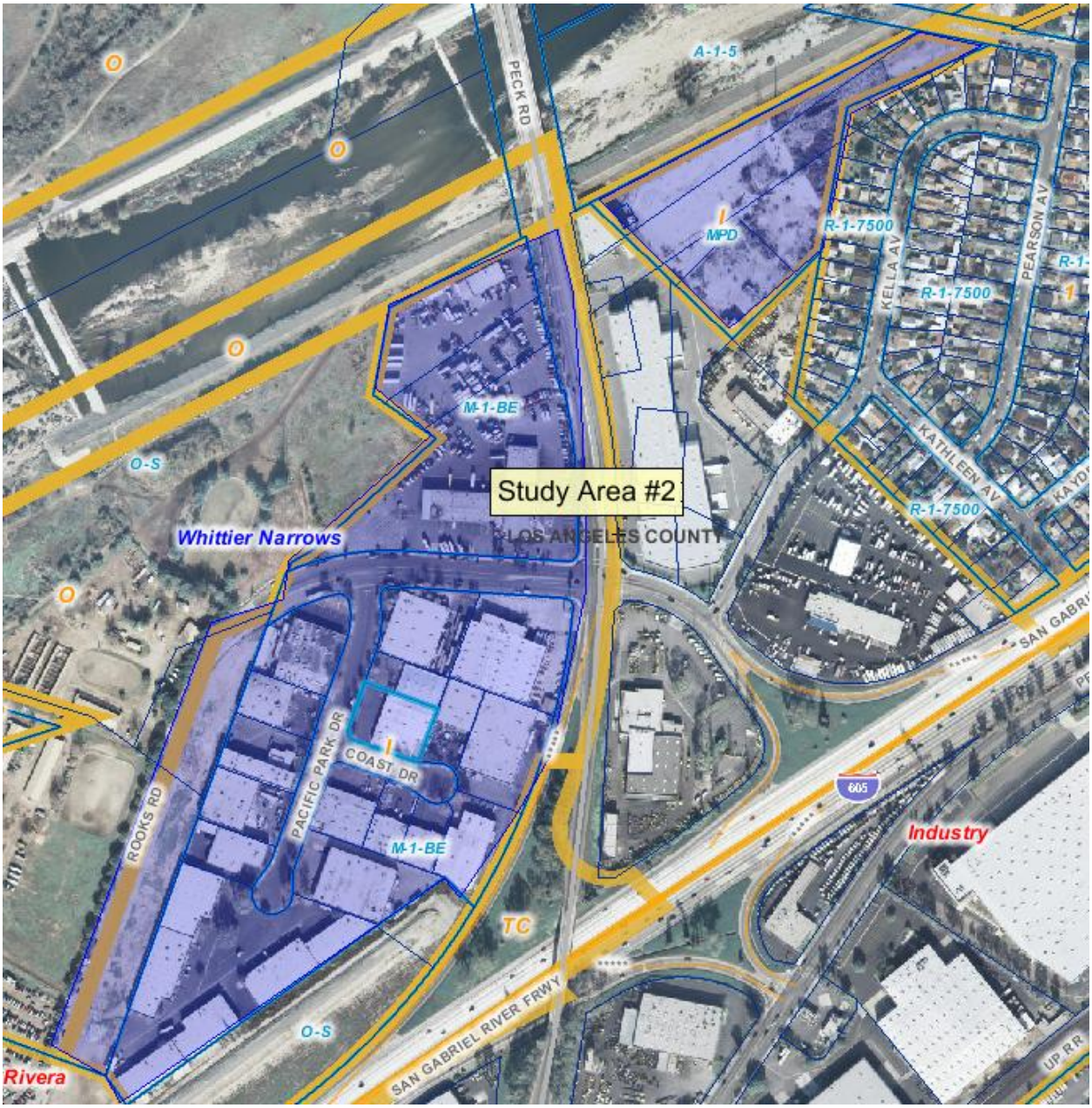
Figure J.42: Whittier Narrows/South El Monte Study Area 1

Study Area 1: The majority of study area 1 is used by the Los Angeles County Sanitation Districts, and the existing industrial use is updated and fully utilizes the property. The industrial parcels are adjacent to both industrial and residential districts, with many natural borders already formed. There is close access to State Route-60 and Interstate-605. Little development is necessary or possible. There are a few areas with land use and zoning inconsistencies.

Recommendation: Employment Protection District

Correction: Along the north side of State Route-60, the R-A (Residential-Agricultural) zones should be changed to industrial zones. South of the freeway, there is a large parcel with an M-1-DP (Light Manufacturing) zone, with a Category 1 (Low Residential Density) land use designation that should be changed to a Light Industrial (IL) land use. The two parcels at the intersection of Workman Mill Road and the water channel are residential and commercial uses and their land use designation and zones should be changed.

Figure J.43: Whittier Narrows/South El Monte Study Area 2



Study Area 2: Study area 2 is located north of Interstate-605 and is used for industrial purposes. The area is surrounded by industrial parcels and has access to Interstate-605. The existing industrial uses are in good condition and viable.

Recommendation: Employment Protection District

Willowbrook

Figure J.44: Willowbrook Study Area 1

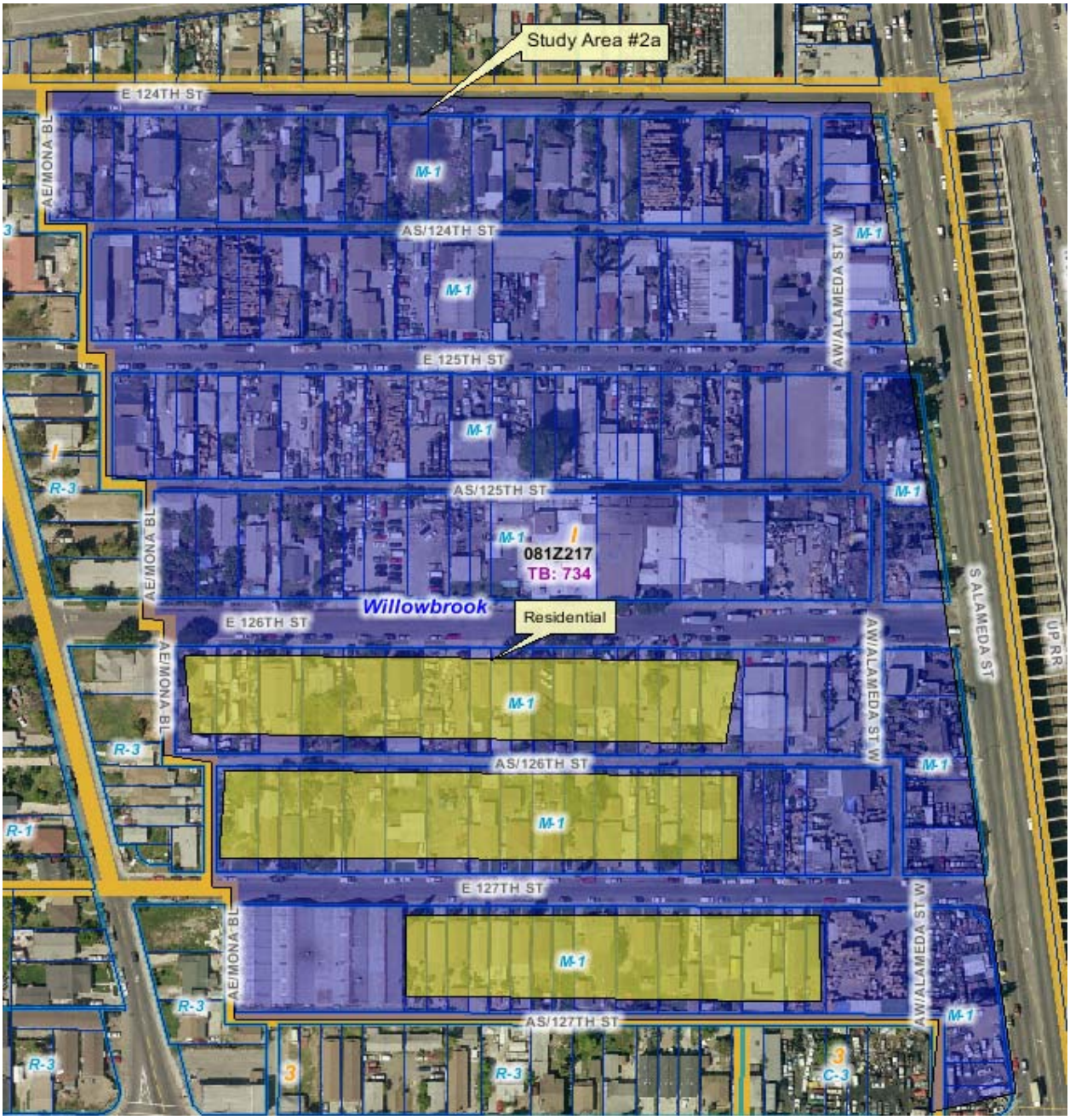
Study Area 1: Study area 1 is located north of Interstate-105 and is bordered by the Alameda Corridor to the east and S. Mona Boulevard to the west. To the north of the study area, in the City of Los Angeles, is a large lumber company. Much of the western portion of the study area is developed

with single and multifamily residential uses. The Industrial land use designations and the residential zoning are inconsistent. These areas should be changed to residential (H18 or H30), depending on the existing density. Another correction area is an R-2 (Two Family Residential) zoned parcel that is owned by the Los Angeles Unified School District and is currently developed as a school. The remaining parcels in the study area are developed with light industrial, warehousing and distribution, or light manufacturing uses. There are many potential conflicts with auto-related and salvaging businesses near residential neighborhoods. However, the proximity to the Alameda Corridor warrants the protection of the remaining industrial parcels.

Recommendation: Industrial Flex District

Correction: Residential areas need a change in land use designation to residential (H18 or H30). Change R-2 (Two Family Residential) parcel owned by LAUSD to public/semi-public (P) land use designation.

Figure J.45: Willowbrook Study Area 2a

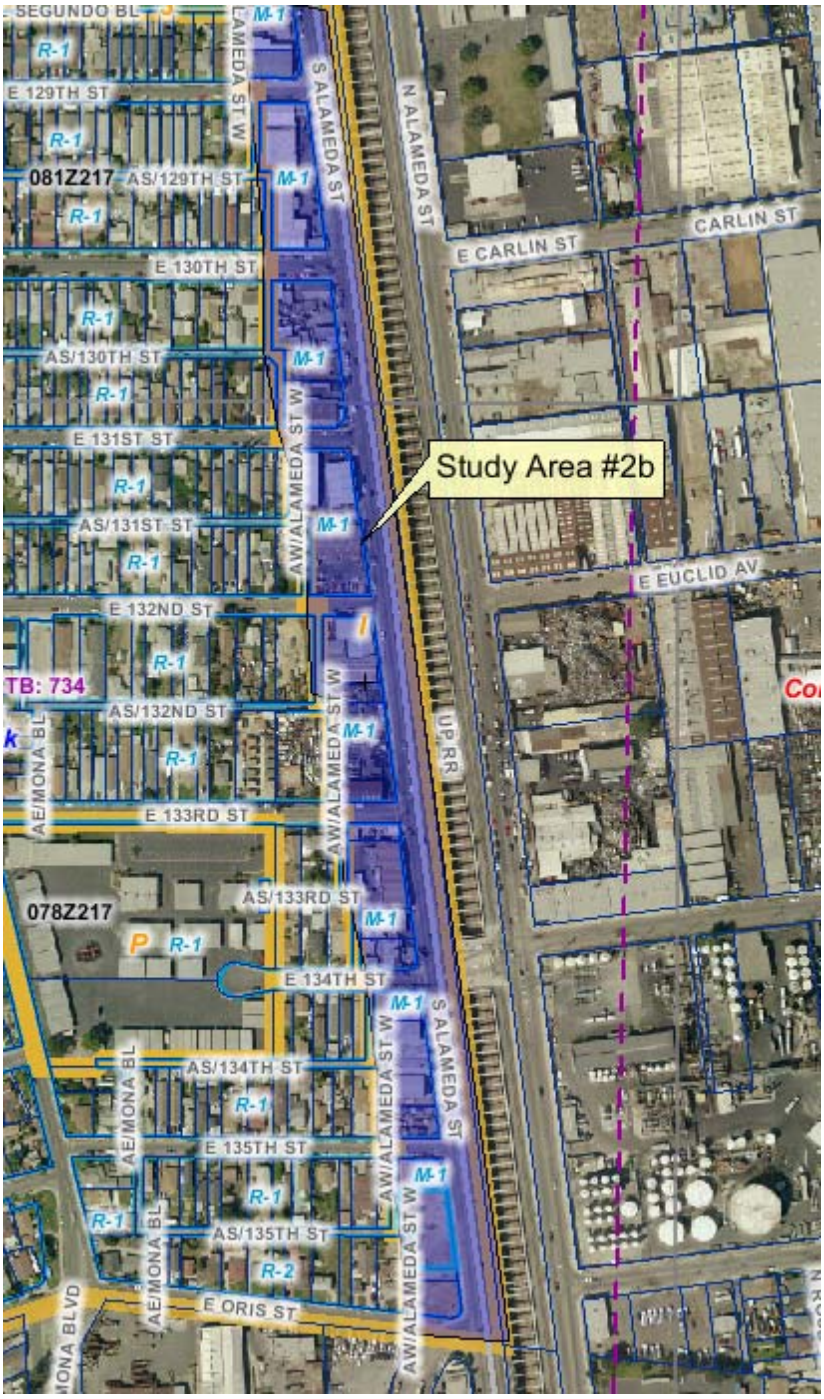


Study Area 2a: Study area 2a extends from E. 124th Street to the north, and El Segundo Boulevard to the south. The eastern portion of the study area is bordered by the Alameda Corridor. To the west of this study area are residential uses. This area is filled with light manufacturing and other industrial uses. There are numerous parcels used for storage and auto-related uses, which are not employment-rich uses. There are also some family and multifamily residential dwellings that are surrounded by industrial uses throughout the study area. Due to potential conflicts with industrial

uses near residences, the study area is recommended to be an Industrial Flex District.

Recommendation: Industrial Flex District

Figure J.46: Willowbrook Study Area 2b



Study Area 2b: Study area 2b in Willowbrook is a narrow area consisting of industrial uses that extends along the Alameda Corridor, from El Segundo Boulevard to the north, down to Oris Street to the south. Dense single family neighborhoods lie west of the study area, while across the Alameda Corridor to the east, are light and heavy industrial uses in the City of Compton. All of the industrially zoned parcels in the study area are being used for light manufacturing and other industrial purposes. Utilization of a buffer zone could be helpful in reducing conflicts with adjacent residential neighborhoods.

Recommendation: Employment Protection District

II. General Policy Recommendations

The following general policy recommendations are based on the analysis of industrial land in the unincorporated areas:

Disparity in Site Conditions

In comparison to industrial land in some of the unincorporated areas, industrial areas in adjacent cities are in better physical condition and have had greater success in targeting higher-uses and more employment-rich industrial businesses. Despite the sometimes less-desirable site conditions, the industrial land in the unincorporated areas is valuable and strategically located, and therefore should not be converted to non-industrial uses. However, significant economic and physical improvements are needed to make these areas competitive in attracting target industries, as outlined in the Economic Development Element.

Recommendation:

- In collaboration with stakeholders, implement incentives, create programs, and apply for grants for the rehabilitation and upgrading of underutilized industrial areas.

Allowable Uses

The industrial districts have many industrial parcels with low-job generating uses, such as auto scrap yards, salvage sites, truck or auto storage businesses, and both small and large-scale public storage sites. These uses on industrial lands are in a much higher proportion to that of adjacent local jurisdictions.

Recommendations:

- Clarify the intended uses for the industrial land use categories, and revise the industrial zones to limit or discourage low-job generating uses, such as public storage sites.

- Implement regulations to limit the number of low-jobs generating businesses in a given area through community-based planning efforts.

Residential Uses

The analysis highlights several parcels in industrial areas where a residential project is entirely surrounded by industrial uses. There are also several instances of large mobilehome parks situated on some of the most valuable industrial land in the unincorporated areas. Similarly, many industrial districts and some heavy industrial uses are directly adjacent to residential neighborhoods. Allowing

residential uses in industrial areas creates numerous compatibility issues, including exposure to noise, toxins, safety concerns, and other environmental impacts, and creates tension between the residential community and industrial business owners and their operations. The County should provide clear policy direction to maintain industrial lands for employment-rich uses, but also to restrict residential uses in heavily industrial districts and appropriately buffer industrial districts from residential neighborhoods.

Recommendations:

- Restrict residential uses in Employment Protection Districts, and ensure that the zoning for these areas limits the ability to convert these lands into non-industrial uses. Create and implement a buffer zone around Employment Protection Districts.

- Allow mixed-uses, supporting commercial development and residential uses near industrial uses only in Industrial Flex Districts, and establish clear guidelines for development to ensure compatibility between mixed-uses and industrial uses.

- For mobilehome parks and other residential uses in Employment Protection Districts, work with stakeholders to identify opportunities to relocate existing residential uses.