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.