



9.0 CONSERVATION AND OPEN SPACE ELEMENT

California planning law requires that every General Plan contain a Conservation Element and an Open Space Element (Government Code, Section 65302 [d] and [e]). The Conservation and Open Space Elements are combined in this General Plan and focus on the preservation and careful use of natural resources within the City. “Natural resources” include biological resources, water resources, air resources, visual resources such as scenic vistas, trees, and hillsides, and open space. Closely linked to natural resources, and also included in the Conservation and Open Space Element, are discussions of cultural resources (fossils, archaeological remains, and historical artifacts and buildings), and agricultural resources. Natural features and resources have shaped both the growth and form of Loma Linda and provide the attractive characteristics of the area. The hillsides at the southerly edge of the City provide a dramatic backdrop for the City and the San Timoteo Creek provides a water feature within the City. A central concern of the General Plan, therefore, is to continue to protect natural resource areas. In concert with this concern is the desire to reduce greenhouse gas emissions that contribute to global warming and increase the use of renewable resources that do not have a negative impact on the earth’s climate.

9.1 PURPOSE

Under State Law a Conservation Element shall include “...the conservation, development, and utilization of natural resources including water and its hydraulic force, forests, soils, rivers and other waters, harbors, fisheries, wildlife, minerals, and other natural resources” (Government Code, Section 65302(d)). It is the intent of this element to define and determine how these finite resources are preserved and managed to assure their long-term viability.

The State Legislature has declared that the preservation of open space land, “... is necessary not only for the maintenance of the economy of the state, but also for the assurance of the continued availability of lands for the production of food and fiber, for the enjoyment of scenic beauty, for recreation, and for the use of natural resources.” California Government Code Section 65560 defines “open space land” as any parcel or area of land or water that is essentially unimproved and devoted to one of the following uses:



- Open space for the preservation of natural resources including areas for the preservation of plant and animal life such as natural habitat areas; rivers, streams, lakes and their banks; and watershed lands.
- Open space used for the managed production of resources including forestlands, rangelands, agricultural lands, areas required for the recharge of groundwater basins, and areas containing major mineral deposits.
- Open space for outdoor recreation including areas of outstanding historic and cultural value; areas devoted to or particularly suitable for park and recreation purposes; areas serving as linkage between major recreation and open space reservations, such as utility corridors, streams and rivers, trails, and scenic highways.
- Open space for public health and safety including areas that require special management or regulation because of hazardous or special conditions, such as fault zones, unstable soil areas, steep slopes, high fire hazard areas, areas required for the protection of water quality and water reservoirs, and floodplains.

9.2 NATURAL AND VISUAL OPEN SPACE RESOURCES

The designation and preservation of open space is a major responsibility of all levels of government and private interests. No standard exists that quantifies the amount or type of open space individual communities should preserve. The provision of adequate open space resources may be achieved by the designation of existing open space areas, the conversion of or redevelopment of urban spaces, or the provision of open space areas in new development. The following open space resources are present within the Planning Area. Open space resources within the Planning Area are depicted in Figure 9.1 and Figures 9.1A through 9.1C.

9.2.1 Natural Open Space

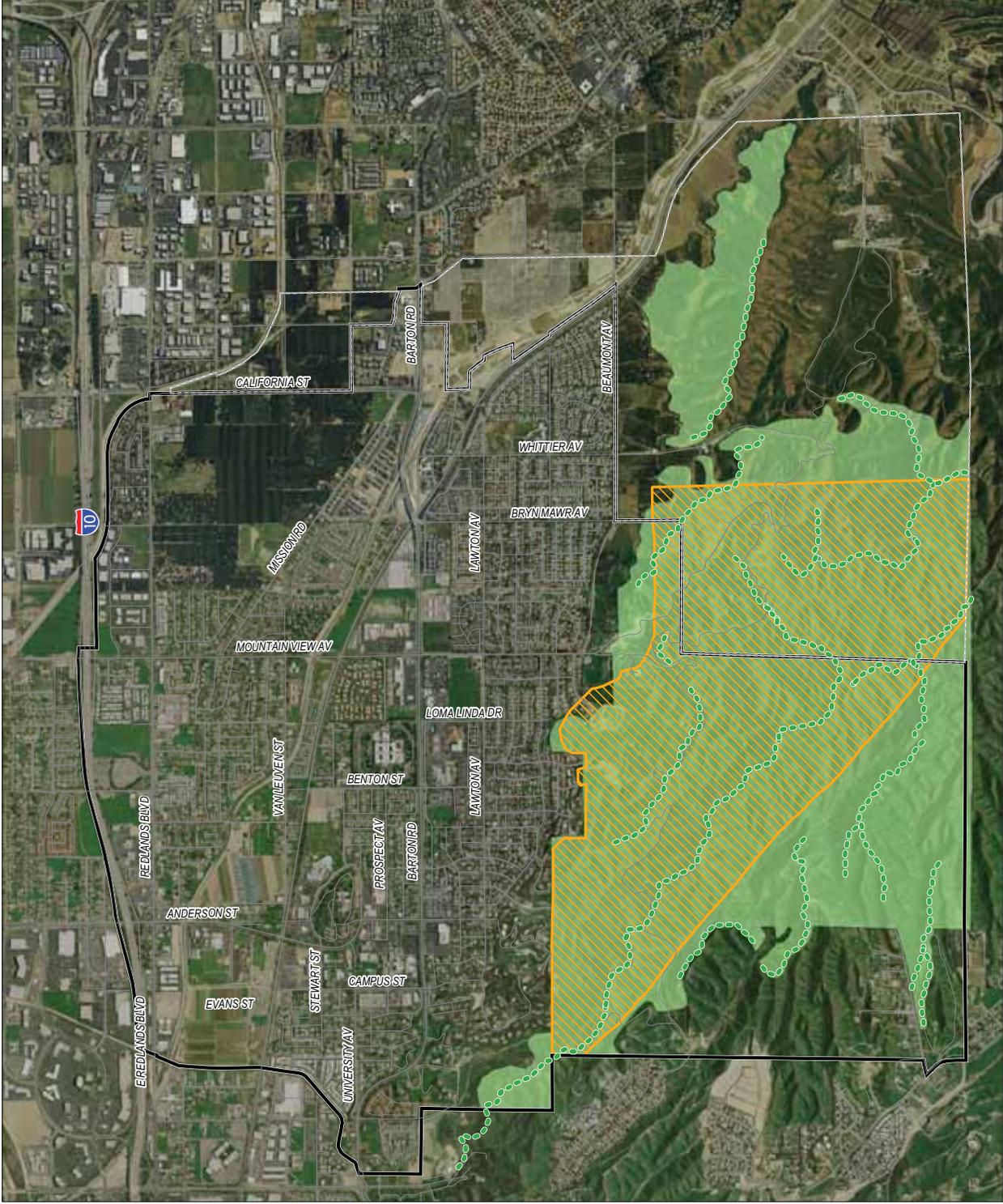
The southerly one-third of the City consists of the rugged, hilly terrain known as the “South Hills.” This area provides a dramatic backdrop for the southerly edge of the City. Because of its natural state, this area represents a significant open space resource for City residents.

9.2.2 Agricultural Lands

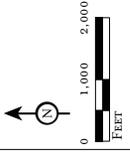
Active citrus production presently exists north of Barton Road, east of California Street. Portions of an area between San Timoteo Creek and the Badlands, east of the extension of Benton Avenue, are also still utilized for citrus production. Urbanization within the Planning Area has gradually decreased the amount agricultural land in the Planning Area.

9.2.3 Parks and Open Space

As outlined and summarized in the Public Services and Facilities Element, Sections 8.3 (Educational Facilities) and 8.6 (Park and Recreation Facilities), a number of public schools and parks are located within the City. While school facilities are primarily utilized during daytime hours, joint use of athletic fields, ball courts, or play areas can substantially increase the amount of available usable open space, especially in urbanized areas of the City.



- City Boundary
- City Sphere of Influence
- Targeted Open Space
- 1996 Hillside Initiative Area
- Approximate Locations of Signature Ridgelines

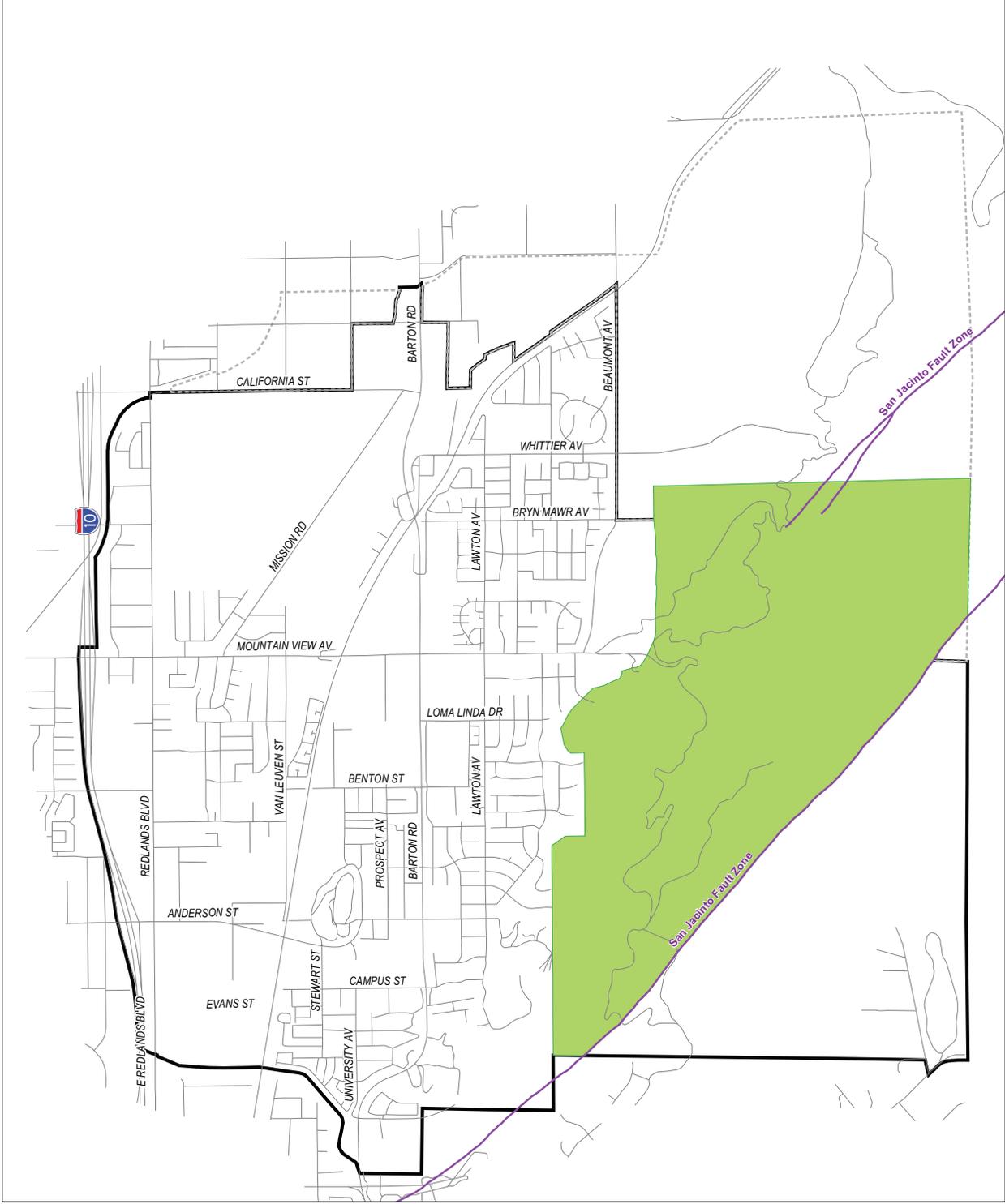


SOURCE: BaseMap AirPhotoUSA 2008

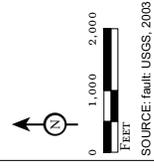
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Figure 9.1

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- City Boundary
- City Sphere of Influence
- San Jacinto Fault Zone
- 1996 Hillside Initiative Area

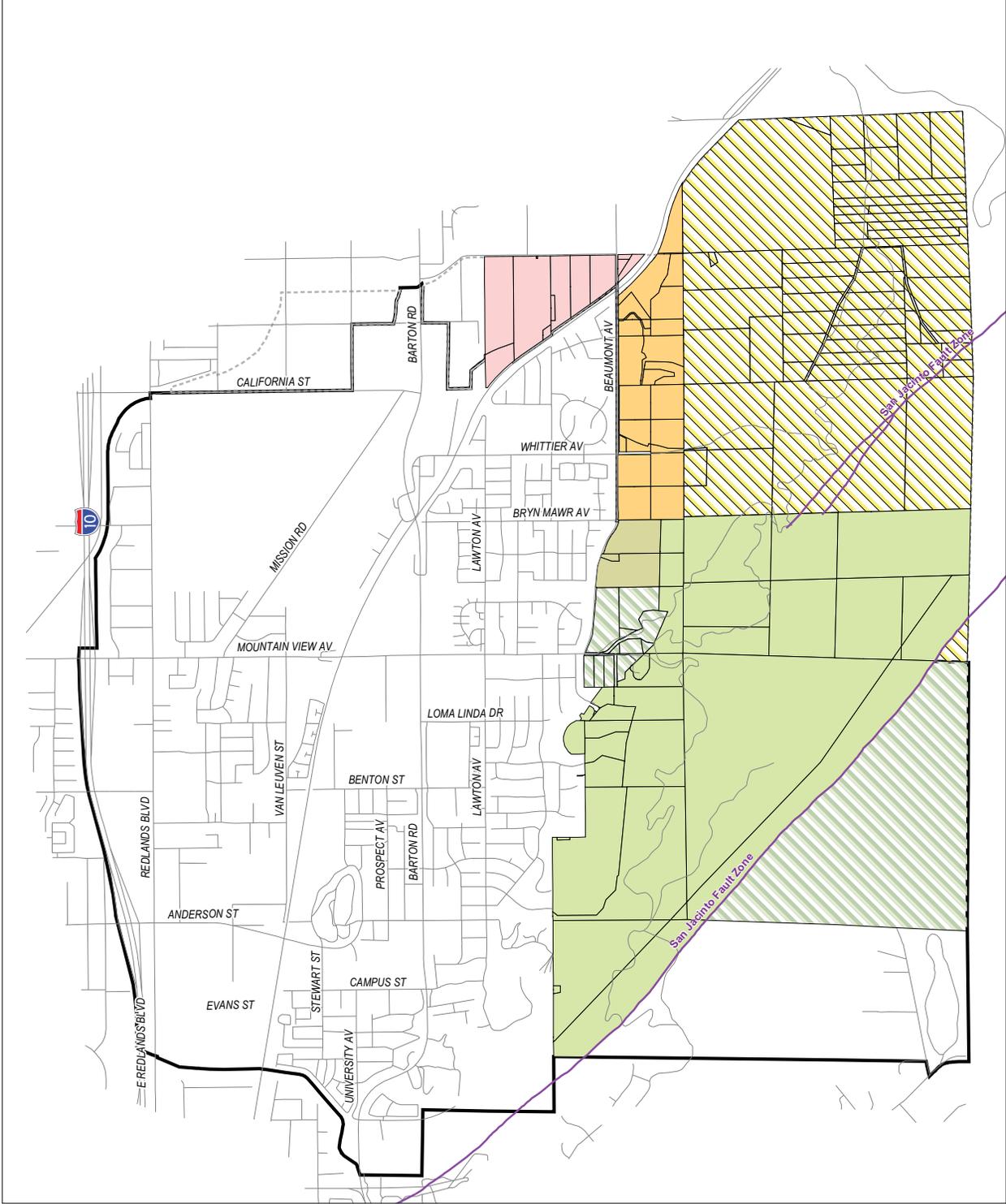


SOURCE: Fault: USGS, 2003

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Figure 9.1A

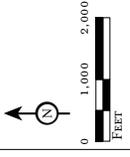
R:\LLD\30 GIS\Reports\GenPlan_2009_Jan\fig9.1A_Hillside Initiative.mxd (04/17/09)



- City Boundary
- City Sphere of Influence
- San Jacinto Fault Zone
- Measure V**
- Rural Estate (0 to 1 du/ac)
- Expanded Hillside Area
- Hillside Conservation Area (0 to 1 du/10 ac)*
- Low Density Hillside Preservation (0 to 1 du/10 ac)**
- Medium Density Hillside Preservation (0 to 1 du/5 ac)**
- San Timoteo Creek Area

Conditions Specified under Measure V

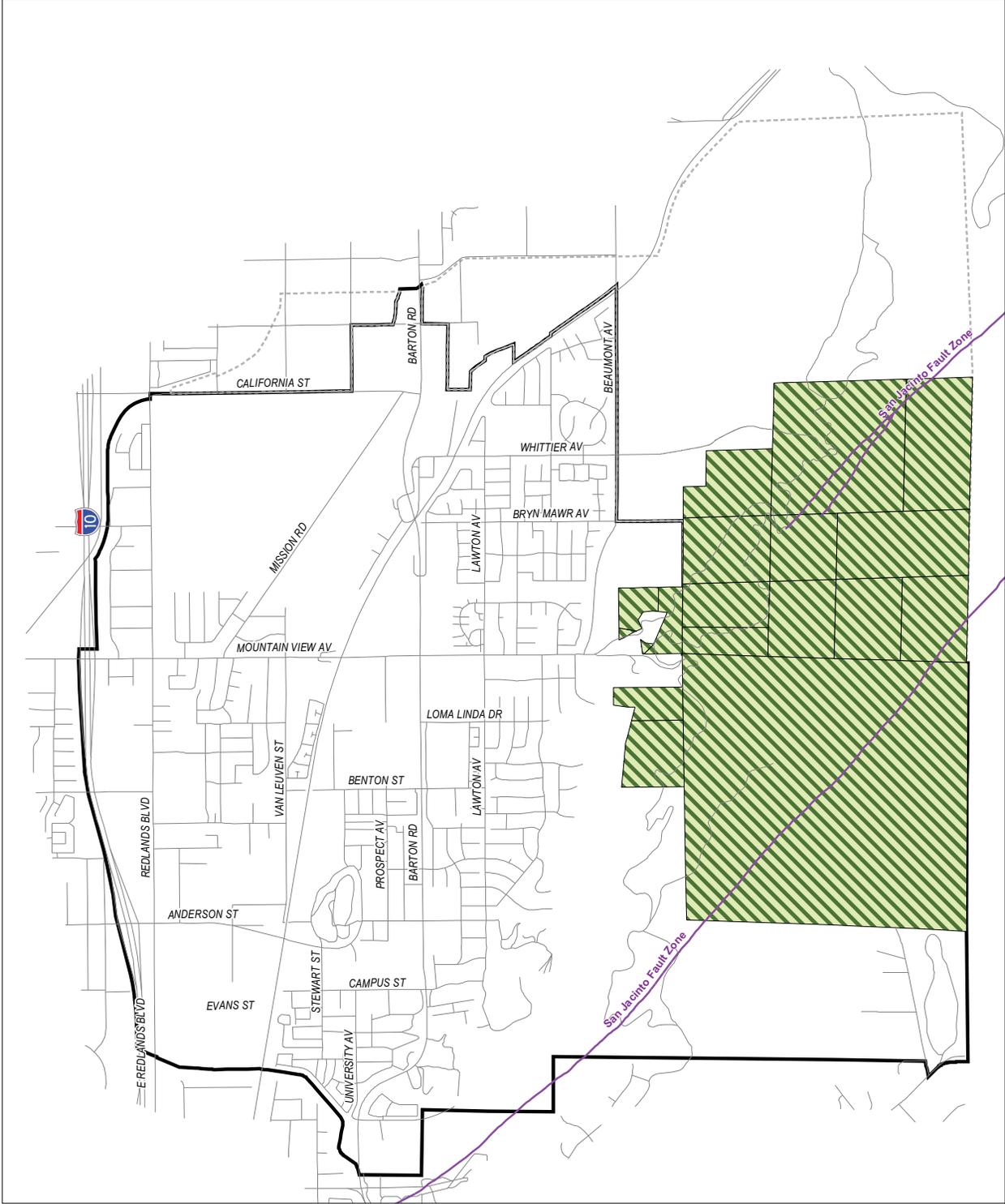
- * Potential bonus of up to 1 du/5 acres when criteria of Hillside Conservation designation are met.
- ** Potential bonus when specified criteria of Chapter 2A of the General Plan are met.



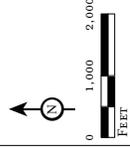
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Figure 9.1B

City of Loma Linda General Plan
**MEASURE V HILLSIDE
 LAND USE DESIGNATIONS**



-  City Boundary
-  City Sphere of Influence
-  San Jacinto Fault Zone
-  Measure T
-  South Hills Preserve



L S A

Figure 9.1C



Veterans Medical Center Open Space

9.2.4 Public Facilities

While not generally included in the accepted definition of “open space,” the collection of landscaped areas adjacent to public facilities provides a convenient and valuable “open space” asset for residents and workers within the City. Features such as gardens, plazas, fountains, and pedestrian trails provide a buffer between adjacent uses and afford citizens the opportunity to enjoy outdoor activities throughout their workday. Prime examples of such features include the landscaped areas adjacent to the City’s Civic Center and Veteran’s Hospital.



SCE Easement

9.2.5 Utility/Drainage Easements

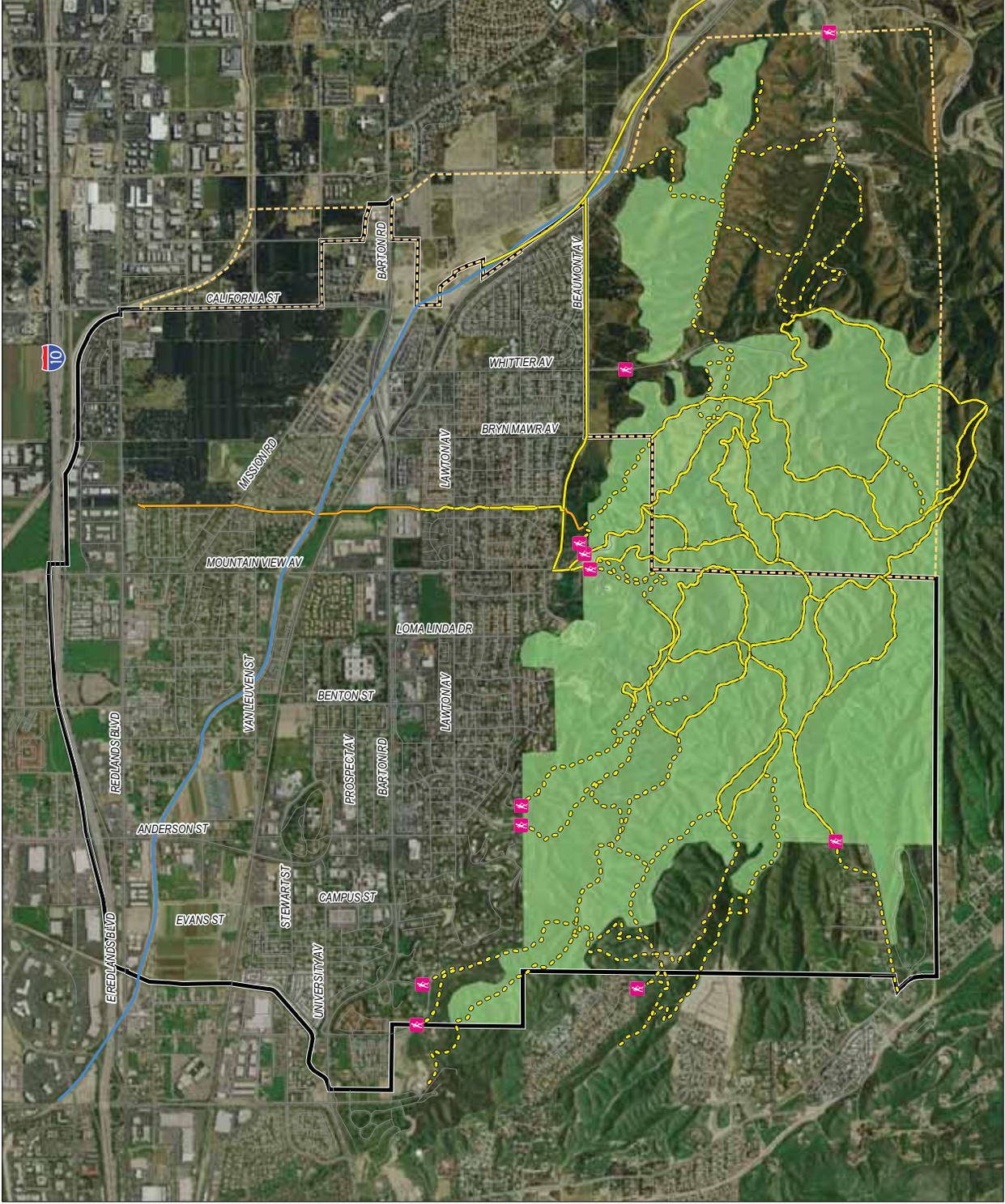
Because of an increased potential for adverse health and property damage, permitted uses proximate to high-tension power lines and flood control channels are generally restricted. Utility providers manage these areas in a manner which maximizes the health and safety benefits to the general public, ensures the economical and efficient upkeep of essential transmission facilities, and safeguards these valuable assets from unauthorized use or trespass.

A Southern California Edison (SCE) easement runs linearly through the City in a north-south direction approximately 0.5 mile east of Mountain View Avenue and at several locations in the Badlands area. The primary purpose of these

easements is to provide for electricity transmission lines. Portions of the easement paralleling Mountain View Avenue have been improved with a trail system, orange groves, and minimal landscaping.

9.2.6 Riding and Hiking Trails

In 1973 the City of Loma Linda adopted a riding and hiking trail plan, which includes the SCE easement and provides access to the Badlands area. The primary use of many of the trail land is for transmission of power, water or access to water sources. A secondary use for this same land is a riding and hiking trail system which when completed would provide a valuable recreational amenity in the City. The riding and hiking trail system shown in Figure 9.2 is designed to tie into trails planned by the County and adjacent cities. Completion of this linked trail system would contribute to the quality of life in the Inland Valley.



- City Boundary
- Sphere of Influence
- Targeted Open Space
- Trail Heads
- Public Trails
- Edison Essement Riding and Hiking Trail
- Green Belt / Flood Control
- Private Trails

Warning

This document depicts the approximate locations of unmaintained trails, trail heads, and open space areas in the city-owned South Hills Preserve, but is not intended as a formal guide to hikers or other users of the subject properties. The City makes no warranty as to the accuracy of any depiction of trails, geography or other physical features. Nor does the City make any representation as to the safety of any private recreational or other use of the subject properties, or as to the legality or safety of any use of adjoining private properties. Unauthorized entry onto any property, whether or not marked as private property on this map, without the consent of the property owner, may be considered trespassing. By entering upon any City-owned land or trail, hikers and other users assume the risk of injury or damages that may result from hazardous recreational activities (Gov. Code Sec. 831.7), from the use of recreational trails (Gov. Code Sec. 831.4), or from the natural conditions of unimproved property (Gov. Code Sec. 831.2).



SOURCE: Baseemap - AIPPhotoUSA, 2008; Thomas Bros. 2011

LSA

Figure 9.2

City of Loma Linda General Plan
**RIDING AND HIKING TRAILS
 SYSTEM MASTER PLAN**



Natural Hazard – San Timoteo Creek

9.2.7 Hazard Setbacks

This category of open space includes areas that are set aside to distance persons and property from natural hazards (such as floods, or unstable slopes). An important function of open space is to act as a buffer to separate people and property from intermittent or persistent hazards that could cause injury, property damage, or death. In addition, within the Planning Area, there are areas that are maintained as open space because they present significant hazards when used for urban purposes. San Timoteo Creek flows diagonally through the central portion of the City. Open space on either side of the channel, set aside to facilitate channel maintenance and to limit potential flood damage, provides an

important open space resource through the central portion of the City. This channel is also a designated section of the concept riding and hiking trail system in the City.

9.2.8 Hillside Areas

The hillside areas of the City of Loma Linda, its planning area, and its sphere of influence are important to the community and shall be preserved in as natural a state as possible consistent with the Hillside Conservations Amendments and the standards set forth in Chapter 2A.

Hillside Preservation Area. *The Hillside Preservation Area is depicted on Exhibit A of Chapter 2A. The boundaries of the Hillside Preservation Areas are described in Exhibit A1 of Chapter 2A.*

The Hillside Conservation Area is described in the Hillside Conservation Ordinance (Ordinance 495) as amended by Ordinance 541, which is codified as Chapter 20.12 of the Loma Linda Municipal Code, and is described in Exhibit B of that Ordinance. The boundaries of the Hillside Conservation Area as depicted on Exhibit A of Chapter 2A are intended to be consistent with Ordinance 541. In the event that any inconsistency should be found, the map set forth as Exhibit A to the Chapter 2A shall control over the map attached to Ordinance 541 as Exhibit A and the legal description attached to Ordinance 541 as Exhibit B.

Expanded Hillside Area. *The Expanded Hillside Area is depicted in Exhibit A of Chapter 2A. The boundaries of the Expanded Hillside Areas are described in Exhibit A1 of Chapter 2A.*

9.2.8.1 Hillside Preservation Area, Hillside Conservation Area, and Expanded Hillside Area Development

(a) **Permitted Development.** *The City shall only allow future development within the Hillside Preservation Area, the Hillside Conservation Area, and the Expanded Hillside Conservation Area which:*

- i. Protects the areas' natural environment and sensitive environmental features, as well as public health and safety, maximizing the preservation of land in permanent public open space;*
- ii. Ensures that the design and layout of future hillside development adapts to the natural hillside topography; and*



iii. *Minimizes the need for and costs of providing infrastructure, utilities, and public services to all hillside areas.*

(b) Ridgeline Setbacks. *Development shall be set back from Primary Ridgelines 100 feet horizontally and 100 feet vertically. "Primary Ridgelines" include ridgelines having any of the following characteristics:*

- i. *Ridges that have a difference in elevation of at least 200 feet from the toe of slope of the valley floor or the toe of slope of any canyon floor;*
- ii. *Ridges which, prior to grading, are visible, or which would be visible but for man-made obstructions such as buildings or houses, from north of Barton Road, Interstate 10, or east of San Timoteo Canyon Road;*
- iii. *Ridges that form a prominent landform in the foreground, a major skyline ridge in the background, or one of the layers of ridges that may be visible in between, or which would be visible but for man-made obstructions such as buildings or houses; or*
- iv. *Ridges that frame major visual access when a person is traveling though the Hillside Preservation Area, the Hillside Conservation Area, or the Expanded Hillside Area and will provide the first view of valley and canyon areas as a traveler emerges from the other side of the ridge.*

9.2.8.2 Preservation of open space and agricultural land areas

Preservation of open space and agricultural land areas is a priority in the City of Loma Linda, its planning area, and its sphere of influence, and dedication of open space in perpetuity shall be a requirement for certain development as well as for the City.

City-owned Land. *The City-owned land in the Hillside Conservation Area, the Expanded Hillside Area, and the Hillside Preservation Area (approximately 850 acres) are designated open space with no development of any type allowable except as provided in Chapter 2A. The City shall not sell, rent, lease, or otherwise confer any right or title to land in the Hillside Conservation Area, the Expanded Hillside Area, and the Hillside Preservation Area to which the City holds title without a vote of the people. The sole exception to this restriction is that the City-owned land southwest of the San Jacinto Fault Line (approximately 350 acres) may be traded for other land inside the Hillside Conservation Area and/or the Hillside Preservation Area and/or the Expanded Hillside Area so long as the land received is preserved and deeded to the City and dedicated as permanent open space and/or conservation area. Land southwest of the San Jacinto Fault Line that is traded by the City may be re-designated for use other than open space after it is traded. Land may be traded only to preserve open space and to reduce densities in other, more highly valued hillside areas, and for no other purposes. The City shall not approve a trade of land unless all of the following conditions are met: (1) Mountain View Avenue shall not connect to future development in the traded land, (2) All roads connecting to future development in traded land shall not extend farther east than Mountain View Avenue, and (3) The only roads which may connect to future development in the traded land are Oakwood Drive or roads connecting to Reche Canyon Road.*

City-owned land in the Hillside Conservation Area, the Hillside Preservation Area, and the Expanded Hillside Area shall be open to public non-commercial recreational uses consistent with the protection of environmental values. Public non-commercial recreational amenities, such as, but not limited to, parks, trails, and tennis courts may be allowed on City-owned land.

Hillside Conservation Area. That area designated "Hillside Conservation" on the Land Use Element Map is an important conservation area for the City. This area is characterized by natural, scenic hillsides, rough terrain and limited services constituting the highest ridgelines visible from the City proper. Only that development which is consistent with the overall conservation goals for this area is



permitted, including residential development at a density not greater than one unit per 10 acres, unless the criteria specified by the Hillside Conservation Land Use Designation are met in which event development at a maximum of up to one unit per 5 acres is permitted. Other consistent uses should be limited to riding, hiking and other trails, and educational and research activities consistent with the conservation of the area. In addition, uses normally associated accessory to such uses, such as corrals, riding stables, groves, and the like may be allowed where the City determines, based upon environmental review, that such uses are consistent with the overall conservation goals for this area.

9.2.8.3 Landform Grading

- a. Blend cut-and fill slopes with existing natural contours to avoid tall manufactured slopes and steep embankments that could lead to soil erosion and silting of lower slopes.
- b. Require manufactured slopes shall be landform graded, except within bedrock, where manufactured slopes in excess of 10 vertical feet feasibly cannot be avoided. "Landform grading" is a contour grading method which creates artificial slopes with curves and varying slope ratios in the horizontal and vertical planes designed to simulate the appearance of surrounding natural terrain (as illustrated below). Grading plans shall identify which slopes are to be landform graded and which are to be conventionally graded.
- c. Design roadway improvements within hillside areas to be designed to minimize grading.

9.2.9 Identified Visual and Natural Open Space Issues

The City of Loma Linda's hillside backdrop is highly prized by its residents. The residents passed the Hillside Preservation Initiative in 1993 to preserve the significant natural hillside amenities within the boundaries of the City. Additionally, the City's slogan is based upon the City's unique setting – "A City with a View." Conserving and protecting the hillsides along with the quality and quantity of clean air, native plant and wildlife species, water resources, and historic resources is a significant ingredient in the well being of the City and its residents. Also as the City becomes more built-out, the pressure to develop the hillsides will increase. Conservation of the hillsides and maximizing the preservation of natural open space are a part of the City's long-range plan for the South Hills area.

Although the City has adopted a Riding and Hiking Trails Plan, guidelines for development and implementation policies for this Plan have not been established.

9.2.10 Policies

Following are the policies related to visual, natural open space, environmentally sensitive areas, and wildlife habitats.

9.2.10.1 Guiding Policy for Visual Resources

Protect views and unique landforms.

Implementing Policies

- a. Preserve outstanding natural features, such as the skyline of a prominent hill, rock outcroppings, the San Timoteo Creek Aviary Sanctuary, and native and/or historically significant trees.
- b. Provide incentives such as a density bonus for clustering of allowable densities to avoid unnecessary grading for site development.
- c. Require new development to be designed to conserve soil and avoid erosion by limiting cut and fill areas and the exporting of soil from the development site.



- d. Limit development on ridgelines.

9.2.10.2 Guiding Policy for Open Space

Acquire, preserve and maintain open space and its natural resources for future generations.

Implementing Policies

- a. Base open space preservation and acquisition on the evaluation of significant viewsheds and ridgelines, wildlife habitats and fragile ecosystems, significant scientifically, historically, or ecologically unique natural areas, passive recreational areas, and stream or creek environs.
- b. Encourage, through open space easements, development rights transfers or acquisition, or other incentives, the long-term maintenance of existing and future open space lands in their natural condition. Encourage acquisition, a land exchange program, or transfer of development rights as a means of placing large unbroken blocks of the South Hills in public ownership to be preserved as open space.
- c. To the extent legally possible, require other local, regional, State, or Federal agencies to maintain an adequate inventory of open space lands within Loma Linda.
- d. Coordinate through development review, Loma Linda's open space system with adjacent cities, San Bernardino County, the State, and regional and private open space systems in order to connect the systems and share resources.
- e. Utilize the resource of national, regional and local conservation organizations, corporations, non-profit associations and benevolent entities to acquire environmentally sensitive land or preservation areas.
- f. The San Jacinto Fault Zone area should be preserved as open space through easement dedication during the review process of applicable new developments.
- g. Limit culverts or the channeling of creeks to only those situations in which public health and safety are at risk so as to preserve creeks and their natural habitat for open space.
- h. Encourage access to open space areas in the design of development adjacent to open space, such as a trail.
- i. Continue to require through development standards, the integration of open space and recreational uses and facilities in all multiple-family residential projects.

9.2.10.3 Guiding Policy for Avoidance of Environmentally Sensitive Areas

New development shall be sited so as to maximize the permanent preservation of large blocks of unbroken open space and to minimize the loss of habitat, wildlife, and watershed resources.

9.2.10.4 Guiding Policy for Development to Respect Wildlife Habitats

Development projects are to be designed to protect habitat values and to preserve significant habitat areas and habitat connections in their natural condition:

Implementing Policies

- a. *Within habitat areas of rare, threatened or endangered species, disturbance of protected biotic resources is prohibited.*
- b. *Development shall avoid "canyon bottoms," which are defined as the land occurring within 200 feet of either side of a line referred to as a "blue line stream" as designated on a U.S. Geological*



Survey (USGS) map. Within riparian and wetland areas, the vegetative resources that contribute to habitat carrying capacity (vegetative diversity, faunal resting areas, foraging areas, and food sources) shall be preserved in place or replaced so as to not result in a measurable reduction in the reproductive capacity of sensitive biotic resources. Development shall not result in a net loss of wetlands.

- c. Buffer zones adjacent to areas of preserved biological resources shall be provided. Such buffer zones shall be adequate in width so as to protect biological resources from grading and construction activities, as well as from the long-term use of adjacent lands. The landscape design adjacent to areas of preserved biological resources shall be designed so as to avoid invasive species that could negatively impact the value of the preserved resource.

9.2.10.5 Guiding Policy for Animal Uses Preserved

Within single-family residential areas, existing entitlements for recreational, equestrian, and animal uses shall be preserved.

9.2.10.6 Guiding Policy for Trails

Maximize the benefits of open space through the provision of recreational trails.

Implementing Policies

- a. Adopt standards and design guidelines compatible with the County of San Bernardino standards, for the Riding and Hiking Trails Plan. Include an implementation program with the standards and guidelines.
- b. Coordinate with public and private entities to link open spaces with the network of paths and trails to create a system of connecting open space.
- c. Work with Southern California Edison to maintain, enhance, and expand the existing trail system on the utility easement within the City. (See Land Use Section 2.2.7.3 for Recreation Implementing Policies).
- d. Work with the San Bernardino Flood Control District and other appropriate agencies to establish a trail for bicycling, walking and running alongside the San Timoteo Creek and where appropriate, other channels and creeks bordering and within the City.
- e. Limit allowable on-trail activities to those that are consistent with protection of the environmental values of adjacent lands

9.3 AIR QUALITY

The City of Loma Linda is located in San Bernardino County, an area within the South Coast Air Basin (Basin) that includes Orange County and the non-desert portions of Los Angeles, Riverside, and San Bernardino Counties. Air quality regulation in the Basin is administered by the South Coast Air Quality Management District (SCAQMD), a regional agency created for the Basin.

9.3.1 Climate

The terrain and geographical location determine the Basin's climate. The Basin is a coastal plain with connecting broad valleys and low hills. The Pacific Ocean forms the southwestern boundary, and high mountains surround the rest of the Basin. The region lies in the semi-permanent high-pressure zone of the eastern Pacific. The resulting climate is mild and tempered by cool ocean breezes. This climatological pattern is rarely interrupted. However, periods of extremely hot weather, winter storms, and Santa Ana wind conditions do occur.



The Basin experiences a persistent temperature inversion (increasing temperature with increasing altitude) as a result of the Pacific high. This inversion limits the vertical dispersion of air contaminants, holding them near the ground. As the sun warms the ground and the lower air layer, the temperature of the lower air layer approaches the temperature of the base of the inversion (upper) layer until the inversion layer finally breaks, allowing vertical mixing with the lower layer. This phenomenon is observed in mid-afternoon to late afternoon on hot summer days, when the smog appears to clear up suddenly. Winter inversions frequently break by mid-morning.

Winds in the vicinity of the Planning Area blow predominantly from the east-southeast, with relatively low velocities. Wind speeds in the Planning Area average about 4 mph. Summer wind speeds average slightly higher than winter wind speeds. Low average wind speeds, together with a persistent temperature inversion limit the vertical dispersion of air pollutants throughout the Basin. Strong, dry, north or northeasterly winds, known as Santa Ana winds, occur during the fall and winter months, dispersing air contaminants. The Santa Ana conditions tend to last for several days at a time.

The combination of stagnant wind conditions and low inversions produces the greatest pollutant concentrations. On days of no inversion or high wind speeds, ambient air pollutant concentrations are the lowest. During periods of low inversions and low wind speeds, air pollutants generated in urbanized areas are transported predominantly onshore into Riverside and San Bernardino Counties. In the winter, the greatest pollution problems are carbon monoxide and oxides of nitrogen, because of extremely low inversions and air stagnation during the night and early morning hours. In the summer, the longer daylight hours and the brighter sunshine combine to cause a reaction between hydrocarbons and oxides of nitrogen to form photochemical smog.



Air pollutants limit visibility

9.3.2 Existing Air Quality

The SCAQMD maintains ambient air quality monitoring stations throughout the Basin. The air quality monitoring station closest to the site with complete air quality data is the San Bernardino station, or SB Central Valley-2 station. The criteria pollutants monitored at this station include carbon monoxide, ozone, Fine Suspended Particulate and Nitrogen Dioxide¹. Sulfur dioxide is not listed or reported because it has not violated Federal or State standards for the past ten years. Carbon monoxide and nitrogen dioxide levels monitored at this station have not exceeded State and Federal standards in the past three years. Ozone concentrations monitored at this station exceeded State standard from 45 to 65 days a

year, with an improving trend. The Federal ozone standard was exceeded at this station from 7 to 39 days a year, also showing an improving trend. The State PM₁₀ standard was exceeded from 22 to 33 days a year, and the Federal PM₁₀ standard was not exceeded in the past three years.

¹ California Air Resources Board air quality data Web site, 2001.



9.3.3 Existing Air Pollution Sources

The City of Loma Linda contains both stationary and mobile sources of air pollutant emissions. The most significant local source of gaseous air emissions is vehicular traffic on I-10 through the northern part of the City and vehicular traffic on arterials within the City. Other important sources include railroad activities and stationary sources associated with local hospitals.

9.3.4 Sensitive Receptors

SCAQMD identifies sensitive receptors as populations that are more susceptible to the effects of air pollution than are the general population. Sensitive receptors located in or near the vicinity of known air emissions sources, including freeways and intersections are of particular concern. Sensitive receptors include the following populations or uses:

Long-term Health Care Facilities	Schools
Rehabilitation Centers	Playgrounds
Convalescent Centers	Childcare Centers
Retirement Homes	Athletic Facilities
Residences	

Land use compatibility issues relative to siting of pollution-emitting uses or siting of sensitive receptors must be considered. In the case of schools, state law requires that siting decisions consider the potential for toxic or harmful air emissions in the surrounding area.

Refer to the Loma Linda General Plan Existing Setting document and the Loma Linda General Plan Environmental Impact Report for additional information regarding Air quality.

9.3.5 Identified Air Quality Issues

The most significant local source of gaseous air emissions is vehicular traffic on I-10 through the northern part of the City and vehicular traffic on arterials within the City. Extensive use of personal motorized transportation modes contributes to the region's poor air quality. The home-to-work trip constitutes the majority of these trips taken on an individual basis. Reducing the number of home-to-work vehicle trips would substantially diminish the amount of pollution generated. Land use regulations influence the distribution of housing, employment centers, and other land uses within the community. The widespread distribution of different land use sectors affects individuals traveling to various destinations with the community. A substantial amount of air pollution can be attributed to automobile trips traveling between these locations. Other important sources include railroad activities and stationary sources associated with local hospitals.

9.3.6 Guiding Policy

Minimize air pollutant emissions within the Loma Linda Planning Area so as to assist in achieving State and Federal air quality standards and seek to attain or exceed the more stringent of Federal or State Ambient Air Quality Standards for each measured pollutant.

Implementing Policies

- a. Cooperate with and support regional, State and Federal agencies to improve air quality throughout the South Coast Air Basin.
- b. Budget for purchase of clean fuel vehicles, including electrical and hybrid vehicles where appropriate, and, if feasible, purchasing natural gas vehicles as diesel-powered vehicles are replaced.



- c. Require developers of large residential and non-residential projects to participate in programs and to take measures to improve traffic flow and/or reduce vehicle trips resulting in decreased vehicular emissions. Examples of such efforts may include, but are not limited to the following: development of mixed-use projects, facilitating pedestrian and bicycle transportation, and permitting consolidation of vehicular trips; provision of charging stations for electric vehicles within large employment-generating and retail developments; and contributions for off-site mitigation for transit use.
- d. As part of the development review process for non-residential development, require the incorporation of best available technologies to mitigate air quality impacts.

9.4 BIOLOGICAL RESOURCES

This section focuses on sensitive species and plant communities that may potentially occur in the City of Loma Linda and its Sphere of Influence (Planning Area). The sensitive species or plant communities have a defined legal status, rarity, or vulnerability and are of high concern to State and Federal agencies. The majority of the undeveloped portions of the Planning Area consists of coastal sage scrub (considered a sensitive plant community in the California Natural Diversity Database) and agricultural land. Within the Planning Area, critical habitat has been designated for the California gnatcatcher by the California Department of Fish and Game in portions of the coastal sage scrub. Critical habitat has been proposed for designation by the California Native Plant Society for the San Bernardino kangaroo rat (SBKR) within portions of the riparian wash habitats.

9.4.1 Land Uses/Vegetation

The land uses within the Planning Area consist primarily of urban and disturbed lands and undeveloped land consisting of several vegetative types, including agricultural lands, non-native grasslands, coastal sage scrub, ruderal areas, and riparian areas. Urban and disturbed lands exist in the relatively flat northern area of the Planning Area and the potential for any sensitive species to occur in this developed area is very low, except in the area where future development may juxtapose against sensitive habitat. In the Planning Area, orange groves comprise the main agricultural crop, and are located predominantly in the eastern areas. Due to the disturbed nature of agriculture, the groves do not support native vegetation and provide habitat only for common wildlife species that are tolerant of disturbed conditions. Figure 9.3 depicts the land use and vegetation in Loma Linda.

9.4.1.1 Coastal Sage Scrub Community

Coastal sage scrub is considered to be a sensitive plant community by resource agencies such as the California Department of Fish and Game (CDFG) and the United States Forest and Wildlife Service (USFWS) and has the potential to contain numerous sensitive plant and animal species. The coastal sage scrub community is located predominately in the southern hills of the Planning Area and consists of approximately 2,939 acres. This community is highly interspersed with non-native grasslands (described below) and includes sparse patches of the chaparral plant community.

9.4.1.2 Non-native Grasslands

Non-native grasslands are the dominant understory of the coastal sage scrub community described above and often occur in large continuous blocks within the coastal sage scrub community (together with the coastal sage scrub community comprises approximately a total of 2,492 acres). Since this plant community co-occurs with the coastal sage scrub community, a majority of this community is included within designated critical habitat for the California gnatcatcher.

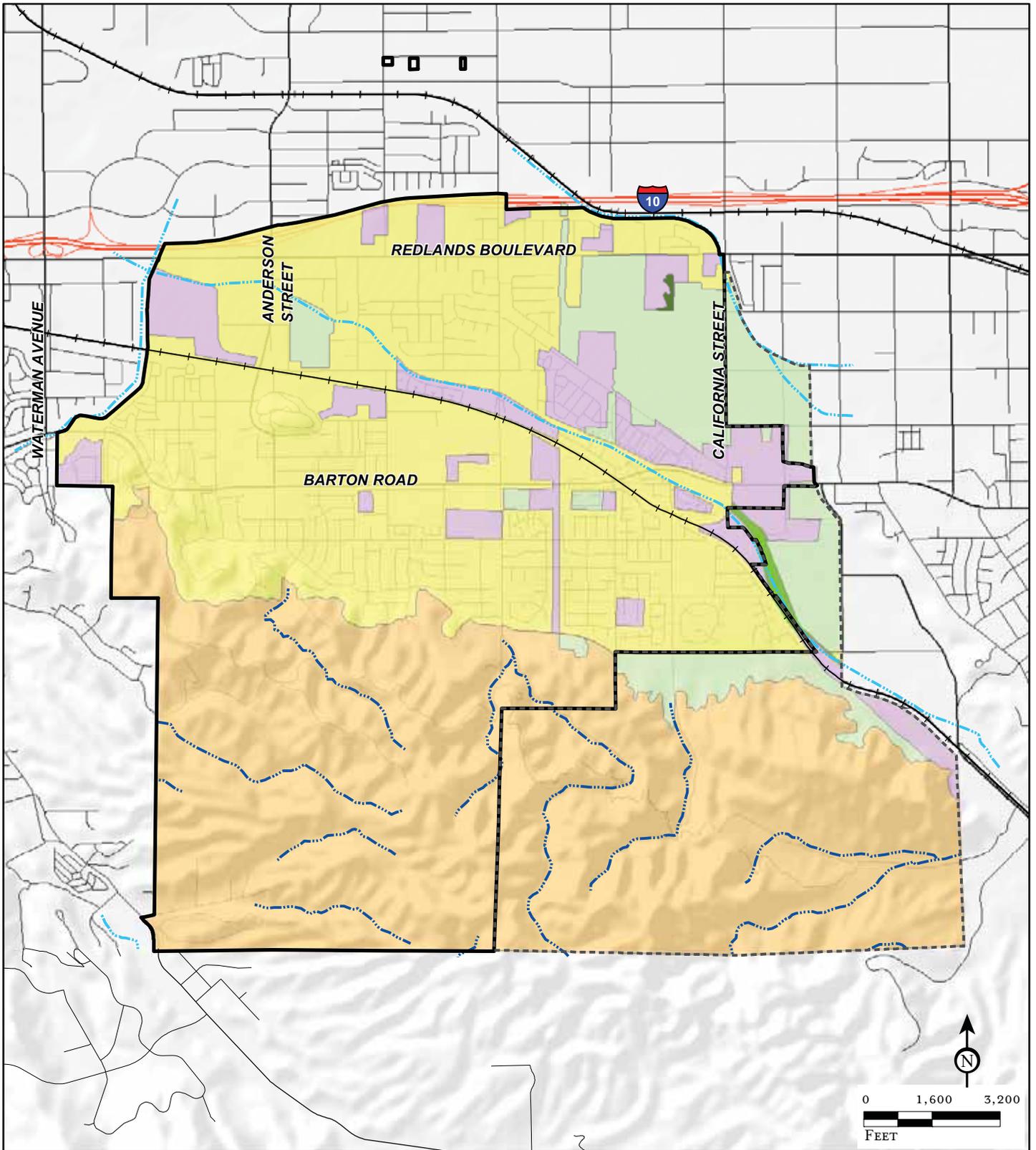


FIGURE 9.3

LSA

LAND USE AND VEGETATION

- OAK WOODLAND
- AGRICULTURAL
- COASTAL SAGE SCRUB/
NON-NATIVE GRASSLANDS
- DEVELOPED
- RIPARIAN
- RUDERAL

JURISDICTIONAL AND INFRASTRUCTURE

- CITY BOUNDARY
- CITY SPHERE OF INFLUENCE
- RAILROAD
- WATER WAYS
- NATURAL WATER WAYS*

*SOURCE: USGS 7.5' Quads: Redlands; Thomas Bros., 2009

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9.4.1.3 Ruderal

Ruderal areas consist of weedy areas that have been previously cleared of brush for agricultural land. Ruderal land (558 acres) is primarily located within agricultural lands in the western portions of the Planning Area, around the San Timoteo Wash, and scattered throughout the developed areas as smaller parcels.

9.4.1.4 Riparian

Twenty-one (21) acres of riparian plant habitat occur along the San Timoteo Wash south of Barton Road. This riparian habitat is within the proposed critical habitat for the SBKR and is discussed in the following section.

9.4.1.5 Oak Woodland

Approximately 3 acres of coast live oak woodland occur within the Planning Area. The oak woodland consists of approximately 35 coast live oaks. This 3-acre habitat is located on a 20-acre parcel, on the south side of Redlands Boulevard, 1,500 feet west of California Street, and is surrounded by agricultural land and development. This stand of oak woodland habitat is isolated from other native habitat and therefore of reduced biological value.

9.4.2 Special Interest Species and Habitats

Legal protection for sensitive species varies widely, from the comprehensive protection extended to listed threatened/endangered species to no legal status at present. The CDFG, USFWS, local agencies, and special interest groups, such as the CNPS, publish watch-lists of declining species. These lists often describe the general nature and perceived severity of the decline. In addition, recently published findings and preliminary results of ongoing research provide a basis for consideration of species that are candidates for State and/or Federal listing. Finally, sensitive species that are clearly not rare or threatened statewide or regionally, but whose local populations are sparse, rapidly dwindling or otherwise unstable, may be considered to be of "local interest."

Twenty-four State and federally listed as threatened or endangered species are identified in the existing watch-lists as potentially present within the Planning Area, although suitable habitat was present for only nine of these species. An additional 35 sensitive species not listed as threatened or endangered are considered potentially present in the Planning Area and of these 35 species, 17 species are considered to have a moderate to high potential for occurrence.

9.4.2.1 Critical Habitat

Critical habitat identifies specific areas that are essential to the conservation of a listed species and may require special management considerations or protection (Figure 9.4). The Planning Area includes 1,910 acres that have been designated as critical habitat for the California gnatcatcher (coastal sage scrub habitat/non-native grasslands). However, focused surveys for the California gnatcatcher were conducted on 900 acres in the western portion of the southern hills in 1998. No gnatcatchers were determined to be present. The closest known occurrence for this species (observed in year 2000) is located in the hills in the City of Colton, within one mile southwest of the southwest corner of the Planning Area and contiguous with the southern hills of the Planning Area. Even though the California gnatcatcher was not observed during the focused surveys, it is known to occur in the vicinity of the Planning Area and could occur in the remaining coastal sage scrub habitat of the Planning Area.

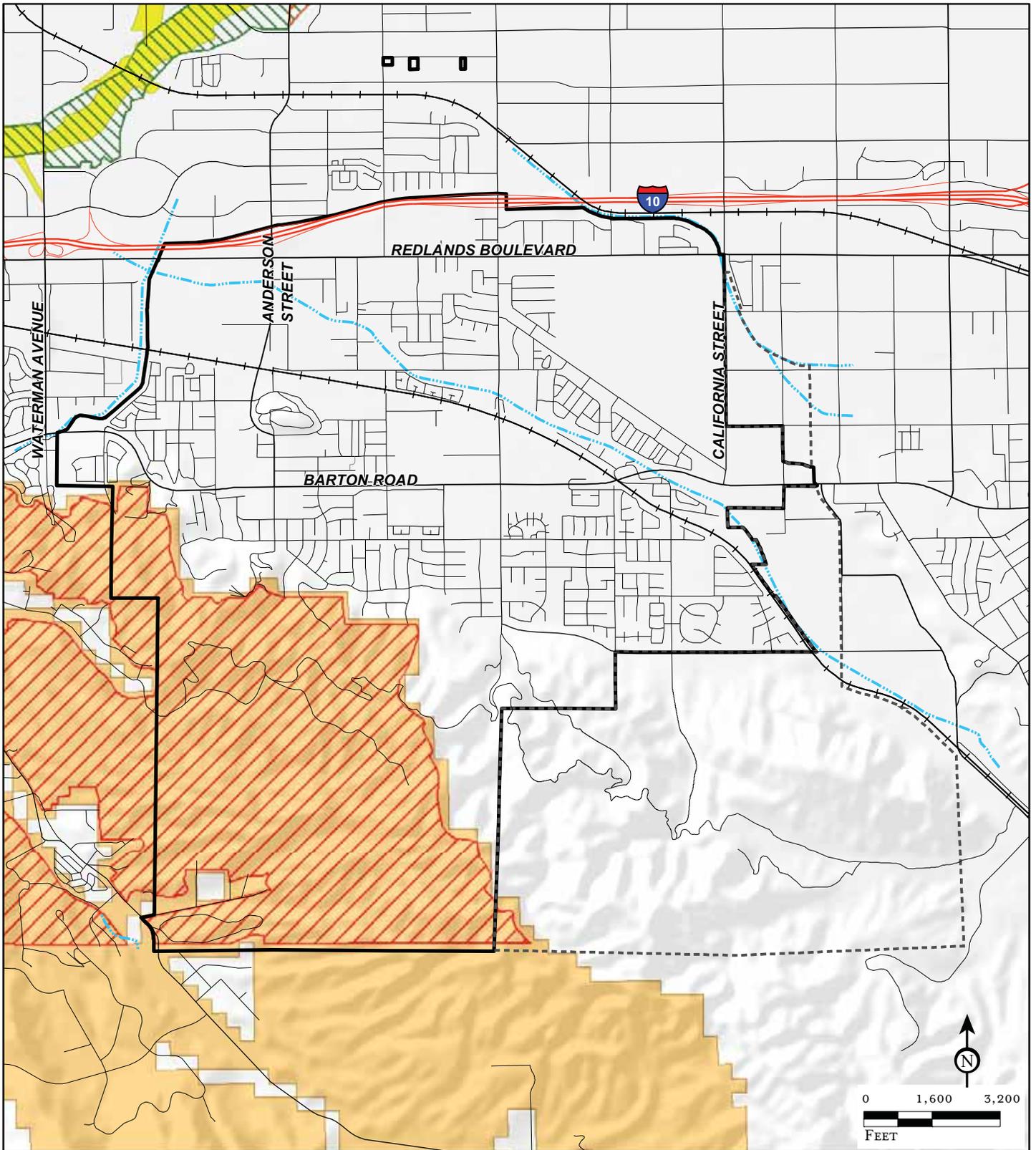


FIGURE 9.4

LSA

LAND USE AND VEGETATION

- Southwestern Willow Flycatcher, Final 10/19/05
- San Bernardino Kangaroo Rat, final, remanded 4/23/02
- San Bernardino Kangaroo Rat, Proposed 4/16/08
- Coastal Calif Gnatcatcher, proposed 4/24/03
- Coastal California Gnatcatcher, final 12/19/07

JURISDICTIONAL AND INFRASTRUCTURE

- City Boundary
- City Sphere of Influence
- Railroad
- Water Ways

SOURCE: Federal Registry Critical Habitat, 2002, 2003, 2005, 2007 and 2008; Thomas Bros., 2009
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Habitat Fragmentation and Wildlife Movement. Habitat fragmentation and wildlife movement is an important issue in assessing habitat values for wildlife. Habitat fragmentation occurs when a proposed action results in a single, unified habitat area being divided into two or more areas, such that the division isolates the two new areas from each other. Isolation of habitat occurs when wildlife cannot move freely from one portion of the habitat to another or from one habitat type to another.

The United States Fish and Wildlife Service has designated critical habitat for lands encompassing essential core populations of coastal California gnatcatchers and linkage areas that may require special management considerations or protections. The southern hills are part of an extension of larger undeveloped areas including Blue Mountain and Box Springs Mountain to the southwest and the Badlands and ultimately the San Jacinto Mountains to the southeast. The southern hills connect to a core open space area for Riverside County's Multi-species Habitat Conservation Plan (MSHCP) to the south through Reche Canyon and adjacent hills.

As a part of proposed critical habitat for the San Bernardino Kangaroo Rat (SBKR), San Timoteo Wash provides a wildlife corridor for the SBKR, as well as other riverine associated species. San Timoteo Wash mainly serves as a corridor leading out of the Planning Areas toward the Badlands, as a result of the degraded nature (cement-lined) of the wash downstream.

Wetlands/Jurisdictional Waters. The U.S. Army Corps of Engineers (Corps) regulates discharges of dredged or fill material into *waters of the United States*. These *waters* include *wetlands* and nonwetland bodies of water that meet specific criteria, including a direct or indirect connection to interstate commerce. A preliminary evaluation of potential jurisdictional waters was conducted within the limits of the Planning Area. The San Timoteo wash is considered to be regulated waters. Regulated waters include non-wetland waters and wetlands that are regulated by the Corps and the Regional Water Quality Control Board (RWQCB). In addition, large washes within the South Hills may also be considered to be regulated waters.

9.4.3 Identified Biological Resources Issues

The biological resources in the City are found mainly on the hillsides and include 2,492 acres of sensitive coastal sage scrub community/non-native grasslands, 21 acres of riparian habitat, and 558 areas of ruderal areas which may contain endangered or sensitive species. In the Planning Area, 1,910 acres are designated critical habitat for the federally threatened coastal California gnatcatcher and 158 acres are proposed as critical habitat for the federally endangered San Bernardino Kangaroo rat.

Development on the hillsides has the potential to alter and eliminate these sensitive habitats and species. The South Hills also provide a wildlife connection to other areas in the County, which could be disrupted with development, as could the wetland areas.

9.4.4 Guiding Policy

Preserve habitats supporting rare and endangered species of plants and animals including wildlife corridors.

Implementing Policies

- a. Comply with the Federal policy of no net loss of wetlands through avoidance and clustered development. Where preservation in place is found to be infeasible (such as an unavoidable a road crossing through habitats), require 1) on-site replacement of wetland areas, 2) off-site replacement, or 3) restoration of degraded wetland areas at a minimum ratio of one acre of replacement/restoration for each acre of impacted on-site habitat, such that the value of impacted habitat is replaced.



- b. Require appropriate setbacks adjacent to natural streams to provide adequate buffer areas ensuring the projection of biological resources.
- c. Preserve, as feasible, the oak woodland areas within the City by requiring development to incorporate the trees into the development design.
- d. Through the project approval and design review processes, require new development projects to protect sensitive habitat areas, including, but not limited to, coastal sage scrub, and *native* grasslands. Ensure the preservation in place of habitat areas found to be occupied by state and federally protected species. Where preserved habitat areas occupy areas that would otherwise be graded as part of a development project, facilitate the transfer of allowable density to other, non-sensitive portions of the site.
- e. Through development review, retain, as feasible, wildlife corridors in the Planning Area in particular, the San Timoteo Wash area.
- f. Require the landscape design of developments adjacent to areas of preserved biological resources to avoid the use of invasive species which could negatively impact the value of the preserved resource.
- g. Cooperate with the State and Federal agencies to encourage preserving streams and creeks in the south hills area in their natural state in order to maintain their value as percolation and recharge areas, natural habitat, scenic resources, and recreation corridors. Where such preservation is no technically and financially feasible, require appropriate mitigation for the loss or modification of a creek or stream.

9.5 AGRICULTURAL RESOURCES

Agricultural use within Loma Linda has declined in recent years, primarily due to the effects of urban expansion and economic considerations. Currently there are 861 acres within the City of Loma Linda and its Sphere of Influence under agricultural production, representing 3 percent of total developed acreage in the City. The majority of existing agricultural lands is located in the eastern portion of the City with scattered citrus groves throughout the City.



One of several citrus groves in Loma Linda

9.5.1 Identified Agricultural Resources Issues and Opportunities

While the General Plan does not require the long-term retention of agricultural lands, currently productive agricultural land provides open space resources in the eastern and southeastern portions of the Planning Area. Due to this open space amenity, the agricultural uses should be allowed to remain although not required to continue in the long-term.

9.5.2 Guiding Policy

Preservation of agricultural land areas is a priority.

Implementing Policies

- a. *No commercial uses such as, but not limited to, retail stores, professional or medical buildings, offices, warehouses, construction or manufacturing businesses, and hotels, shall be allowed in*



the Hillside Preservation Area, the Expanded Hillside Area, or the Hillside Conservation Area shall be allowed, with the exception of commercial animal and agricultural uses such as ranches, stables, grazing, citrus and avocado groves that existed as of the Effective Date of enactment of Chapter 2A. Commercial recreational uses and associated uses may be allowed consistent with the protection of environmental values.

- b. *The City recognizes the desire to maintain citrus and avocado groves and other agricultural uses as a means to provide open space, to provide and maintain a balanced economy, and to maintain green space and vegetation that will consume carbon dioxide and improve air quality. The open space requirement of Chapter 2A may be met by preserving citrus and/or avocado groves or other agricultural uses determined appropriate by the City Council, and assuring ongoing maintenance through a conservation easement or other legal mechanism, provided that the minimum percentage open space requirements of Chapter 2A are met.*

9.6 WATER RESOURCES

The City of Loma Linda is within the Santa Ana River Watershed. This watershed drains the southern portions of the San Bernardino Mountains and the eastern San Gabriel Mountains. Located within the Planning Area are three hydrological groundwater basins/aquifers. Groundwater basins or aquifers can be described as natural underground water storage areas. In addition, several sub-basins also underlie the City of Loma Linda. The Bunker Hill Water Basin is under the northern portion of the City. This water basin underlies most of the San Bernardino Valley extending from the San Bernardino Mountain range to the south hills of Loma Linda. This aquifer supplies the majority of water to the City of Loma Linda. The groundwater basin underlying the southwest portion of the City is the Reche Canyon Basin. The San Timoteo Basin is under the southeast portion of the City.

The Bunker Hill Basin is artificially recharged by surface stream diversions made for groundwater replenishment. Lytle Creek, the Santa Ana River, Mill Creek, Devil Creek, Twin Creek, Waterman Creek, and Sand Creek are used for groundwater recharge. In excess of 1,000,000 acre-feet of Santa Ana River and Mill Creek waters have been recharged to replenish the Bunker Hill Basin. In addition, water has been imported from the State Project Water for replenishment into the Bunker Hill Basin. Since 1972, an excess of 150,000 acre-feet of imported State Project Water has been recharged in the Bunker Hill Basin. The replenishment activities play an extremely important role in managing the Bunker Hill Basin to supply the current and future needs of the Basin, which includes the future needs of the City of Loma Linda.

The City of Loma Linda groundwater is supplied from five wells. They include the Richardson Wells #1, #3, and #4; and Mountain View Wells #3, #4, and #5. All of the City's wells are located in the Bunker Hill Basin. The water that replenishes the Bunker Hill Basin comes from annual rainfall and snow pack from the San Bernardino Mountain range. Due to seasonal variations of rainfall and pumping, water levels have fluctuated and will continue to fluctuate within this basin.

Water quality is not consistent among the basins underling the City. The groundwater basins in the southern portion of the City do not generally consist of good water-bearing deposits and very few wells are known to exist in those areas. The City of Loma Linda completed a drinking water source assessment to protect this water supply and identify potential contamination sources. These assessments were completed at the following locations: Mountain View Well #3, November 1999; Richardson Well #4, February 2000; Mountain View Well #4, May 2000; and Richardson Wells #1 and #3. The City of Loma Linda water supply meets or exceeds all current health and safety standards.



9.6.1 Identified Water Resources Issues

The quantity and quality of the groundwater needs to be maintained and conserved to ensure water for future generations.

9.6.2 Guiding Policy

Water quality and availability are critical to the current and future residents of the City of Loma Linda, its planning area, and its sphere of influence. No new development shall be approved that endangers the quality or quantity of water delivered to households within the City.

Implementing Policies

- a. *No development project shall be approved which would cause the quality of water delivered to Loma Linda households to fail to meet State and/or Federal water quality standards, or which would cause an increase in residential rates, or which would result in a restriction of water usage, except for those projects exempt under State and/or Federal law.*
- b. Develop and encourage the implementation of water conservation programs by residents, employers, students, and service providers.
- c. Participate with State and regional agencies to monitor groundwater supplies and take steps to prevent overuse, depletion, and toxicity.
- d. Encourage sustainable landscapes or landscapes that require little irrigation through the use of drought-tolerant and native vegetation in new development.
- e. Through the development review process require that water supply capacity is available or will be available prior to approval of a development project. Do not approve projects for which assured water supply is not available.
- f. Pursue the use of reclaimed water for the irrigation of all appropriate open space facilities and City projects, and encourage existing and new developments to tie to the reclaim water system when available and recommended by the San Bernardino Municipal Water Department (wastewater provider) to reduce demand on municipal water supplies.
- g. Through the development review process, encourage water conservation in all new and rehabilitated development through the use of water conserving fixtures in all new residential and commercial development.
- h. Require implementation of Best Management Practices to reduce drainage system discharge of non-point source pollutants originating from streets, parking lots, residential areas, businesses, industrial operations, and those open space areas involved with pesticide application.

9.6.1.2 Guiding Policy for Water Efficiency

Maximize water efficiency, water reuse, and the beneficial use of stormwater, including groundwater recharge and water quality improvement.

Implementing Policy

- a. Reduce the waste of potable water through efficient technologies, conservation efforts, and design and management practices, and by better matching the source and quality of water to the user's needs.



- b. Support efforts to reduce waste and increase reuse through integrated planning of programs and complementary land use and building regulations. Assess and remove barriers to integrated water resource planning.
- c. Initiate a Water Conservation Program. Develop model water demand management programs using best practices, including the following:
 - Requiring water conservation in new construction;
 - Requiring water conservation fixtures;
 - Encouraging business rebates; and
 - Encouraging plumbing maintenance programs.
- d. Require site-appropriate, drought-tolerant low water use landscaping and efficient irrigation systems where appropriate for new development. For parcels adjacent to publicly managed open space, appropriate landscaping will also be non-invasive and have low flammability. Limit the amount of water intensive landscaping, particularly lawn area allowed, in order to reduce the amount of water needed for irrigation.
- e. Encourage use of irrigation technologies such as evapo-transpiration systems—where real-time weather data are transmitted to installed controllers to automate water needs—that save water, promote greater plant health, and reduce runoff. Encourage water agencies to conduct irrigation training workshops for homeowners and professionals.
- f. Encourage use of on-site rainwater capture, storage, and infiltration for irrigation and other nonpotable uses, and work with appropriate authorities to establish standards for rainwater quality and use. Ensure that catchments do not adversely affect habitat dependent on in-stream flow.

9.7 CULTURAL RESOURCES

The City of Loma Linda planning area includes several known historic sites and areas that may have prehistoric value.

9.7.1 Paleontological Resources

Paleontological resources are recognized as nonrenewable resources significant to our culture, and are afforded protection by Federal, State, and local environmental guidelines. Geologic formations are ranked by their potential to contain significant, nonrenewable paleontologic resources (SNPR). The Loma Linda Planning Area is in the southern San Bernardino Basin, a structural basin that filled with sediments as a result of activity on the San Andreas and San Jacinto Fault systems. Sedimentary deposition has been taking place in this basin since late Miocene time.

Loma Linda lies on the north-sloping face of a ridge that runs east-west, south of San Timoteo Creek and north of Reche Canyon. The topography of the ridge is highly modified by drainage patterns characteristic of badlands topography, and the area is often referred to as “The Badlands.” Geological mapping of the Loma Linda area indicates the presence of four sedimentary units with two of the sedimentary units having a high potential for paleontological resources. Records in the San Bernardino County Museum do not indicate any record of previous paleontological resource assessments in one of these sedimentary units (San Timoteo Formation) and consequently no resource localities have been recorded in or immediately adjacent to the Planning Area.



9.7.2 Historical Resources

Historic resources include sites, structures, or other physical evidence of past human activity greater than 50 years old. Although there are no recorded prehistoric sites within the study area, the Guachama Rancheria is an important historically known Native American property within the Planning Area with a potential for associated prehistoric resources. The Loma Linda Planning Area includes many sites of historic value and the area has been the subject of many historic studies with the latest conducted in 1988. Although a total of 197 historical properties was identified in this study only 22 were evaluated for potential eligibility for listing in the National Register of Historic District Places (NRHP). The balance of the historic buildings (175) was described by street/neighborhood in general terms, but not inventoried or mapped. The City of Loma Linda adopted the Historic Preservation Ordinance in 1992 establishing the Historic Commission. The Commission recommends to the City Council designation of landmarks and preservation districts, reviews permits for alterations to landmarks, and promotes public awareness of historic resources.

9.7.3 Potential Historical Districts

Four potential Historic Districts were identified in the 1988 historical study and it is likely that additional contributing features along with buildings will be identified upon more in-depth investigation of the potential districts. Historic Districts are areas containing concentrations of improvements with historic interest or value. Preservation of these districts will retain the heritage of the City. The potential districts are listed below.

9.7.3.1 Mission District

The Mission architectural/historical district extends along both sides of Mission Road between California Street to the east and Pepper Way to the west. The district includes both a potential ethnohistoric archaeological site and numerous standing structures (Table 9.A). The range of resources extends from the late Mission Period (1819) to the early 20th century.



Craftsman home in the Mission District

Table 9.A: Mission District Resources

Resource Address/Location	Resource Name
25926 Mission Road	Adobe (moved from San Timoteo Winery)
25949 Mission Road	Craftsman Residence (Van Uffelen Dairy)
26100 Mission Road	Craftsman Residence (Van Leuven Property)
26248 Mission Road	Frink Adobe
26300 Mission Road	Craftsman Residence
26432 Mission Road	Hinckley Ranch
Mission Road and Pepper Way	Guachama Rancheria



9.7.3.2 Campus District

This potential district was identified in association with the growth of the Loma Linda University/ Health Center/Sanitarium and Adventist Health System. This district is important due to the historical, religious, educational, and scientific theme that binds these resources together. Minimally, however, the following resources are identified as potential contributing features:

- Campus Hill SDA Church
- Main University Campus (1934 Art Deco buildings)
- University Church
- Sanitarium Complex and associated features (Nichol Hall)
- “Old” office buildings on hill of campus (Four original patient cottages)
- Bungalow on hill of campus (11057 Sanitarium Drive)



Nichol Hall at Loma Linda University

9.7.3.3 Prospect/Starr District

This district is generally bounded by Prospect Avenue to the north, Hillcrest Street to the east, Barton Road to the south and Anderson Street to the west. Starr Street represents the east-west core of this district, which is almost exclusively residential with a high concentration of housing from the period c.1890 to 1920. The majority of the structures are in good to fair condition, and many are substantially unaltered.

9.7.3.4 Bryn Mawr

Eleven properties on First, Juanita, and Mayberry Streets are remnants of the historic Hispanic community of Bryn Mawr (Table 9.B). This is a candidate for a historic district, as it appears to be the center of local Mexican cultural history within the Planning Area. At the very least, the Bryn Mawr School/Sacred Heart Church warrants special planning consideration as a designated cultural resource.

Table 9.B: Bryn Mawr Historic Properties

Resource Address	Resource Name/Type
26359 First Street	Old Frame Residence
26379 First Street	Residence
26389 First Street	Victorian Cottage
26415 First Street	Residence
26470 First Street	Residence
25931 Juanita Street	Residence
25978 Juanita Street	Residence
25985 Juanita Street	Residence
25995 Juanita Street	Residence
26006 Juanita Street	Residence
26019 Juanita Street	Residence
26271 Mayberry (Old Barton Road)	Bryn Mawr School/Sacred Heart Church



9.7.4 Identified Cultural Resources Issues

Only a small percentage of the Planning Area has been surveyed for prehistoric resources. Although the Planning Area is considered moderately sensitive for such resources, the Guachama Rancheria (Mission Road and Pepper Way) is considered highly sensitive or very likely to contain such resources. The historic cultural landscape of Loma Linda is complex and in general all the potential historic districts should be considered highly sensitive for subsurface cultural deposits. Since the last Architectural/Historical Inventory has accuracy and consistency issues, an update involving at least the informal recordation and mapping of all historic properties listed in this report is recommended.

9.7.5 Guiding Policy

Preserve and protect the City's historic structures and neighborhoods. Identify and preserve the archaeological and paleontological resources in Loma Linda.

Implementing Policies

- a. Update the Survey of Historic Properties Inventory of 1988, taking into consideration buildings, neighborhoods, and other features of historic, architectural, or cultural significance.
- b. Establish priorities and pursue designating historic districts, following study and recommendation by the Historic Commission to preserve historic areas.
- c. Consider pursuing the designation of new historic landmarks.
- d. Preserve significant historic structures through review of demolition permits or alterations to such structures by the Historic Commission. Permit adaptive reuse of historic landmark structures for institutional, office, or commercial uses, where improvements to the structure retain the integrity of the historic landmark (see Community Design Element, Section 3.2).
- e. Where new development occurs around an historic structure, ensure that the surrounding setting is compatible with the historic structure (see Community Design Element).
- f. As a standard condition of approval for new development projects, require that, if cultural or paleontological resources are encountered during grading, alteration of earth materials in the vicinity of the find be halted until a qualified expert has evaluated the find and recorded identified cultural resources.

9.8 GREENHOUSE GAS REDUCTION

Local agencies, such as the City of Loma Linda, have an important role to play in California's fight against global warming, which has been identified as one of the most serious environmental effects facing the State today. Cities are being encouraged by the State to incorporate sustainable design into projects from the start, addressing global climate change considerations at the earliest feasible time. Through its General Plan, the City of Loma Linda intends to encourage well-designed, sustainable development projects to help move the State away from "business as usual" and toward a low-carbon future.

Assembly Bill (AB) 1493 of 2002 required the California Air Resources Board (CARB) to develop and adopt the nation's first greenhouse gas standards for automobiles. On June 1, 2005, Governor Schwarzenegger signed Executive Order S-3-2005, which calls for a reduction in greenhouse gas emissions to 1990 levels by 2020, and for an 80 percent reduction in GHG emissions by 2050. In addition, Governor Schwarzenegger signed AB 32, the California Climate Solutions Act of 2006 (Health & Safety Code Section 38500 et seq.), in September 2006. AB 32 codified the state's



greenhouse gas emissions target by requiring that California’s greenhouse gas emissions be reduced to 1990 levels by 2020. In addition, AB 32 directs CARB to make available a list of early action GHG emission reduction measures by June 30, 2007. These measures were updated in October 2007 (CARB, 2007). Regulations to implement these measures are to be adopted before January 1, 2010, and the finalized emissions reduction measures will become operative and enforceable January 1, 2012.

To address the issue of global climate change and reducing carbon emissions requires a broad range of policies and actions. By providing a balance between local employment and housing, the General Plan provides the opportunity for Loma Linda residents and workers to reduce their daily commute, with consequent reductions in air pollutant and carbon emissions. Providing for compact, walkable communities and infill development in areas served by existing infrastructure, utilizes the resources that existing neighborhoods offer, and conserves open space and natural resources.

Building “green” will reduce energy consumption reduce carbon emissions, and is a sound financial choice. Investments in green buildings pay for themselves, according to a new study for 40 California agencies. This study, drawing on national data for 33 green buildings and an in-depth review of several hundred existing studies, found that sustainable buildings are a cost-effective investment. The report concluded that financial benefits of green design are between \$50 and \$70 per square foot in an LEED building, over 10 times the additional cost associated with building green.

Much of our built environment is now powered by fossil fuels, which create the greenhouse gases that contribute to global warming. Thus, reducing energy consumption and increasing the use of renewable energy sources is a key component of addressing global climate change concerns.

9.8.1 Guiding Policy

Minimize greenhouse gas emissions that are reasonably attributable to the City’s discretionary land use decisions and internal government operations, with the goal of reducing Loma Linda’s greenhouse gas emissions to 1990 levels by 2020.

Implementing Policies

Compact Community Measures

- a. Encourage the development of vacant and underutilized parcels consistent with neighborhood character in a way that best adds value to the surrounding area.
- b. Facilitate employment opportunities that offer low vehicle use and minimize the need for automobile trips, such as live/work, telecommuting, satellite work centers, and home occupations, in addition to implementation of mixed-use development strategies.
- c. Encourage patterns of commercial development that support use of public transit, including modifying development regulations to facilitate commercial and/or mixed use projects at sites near transit stops.

Energy Conservation and Air Quality Measures

- d. Encourage energy-efficient landscaping for resource conservation by developing guidelines that emphasize proper irrigation techniques and sustainable landscaping (organic fertilizers and pesticides).
- e. Consider light-colored surfacing on pavements and rooftops where feasible to reduce heat absorption.



- f. As part of the development review process, work with builders to maximize energy conservation benefits in the placement of buildings on a site with regard to sun and natural breezes.
- g. Actively support provision of infrastructure needed for alternative fuel vehicles, including fueling and charging stations. Review and consider revising applicable codes applying to refueling and recharging infrastructure to facilitate their inclusion in new development where appropriate.
- h. Prohibit the installation of wood-burning fireplaces and other devices in new or renovated homes.
- i. Facilitate implementation of renewable technologies through streamlined planning and development rules, codes, processing, and other incentives.
- j. Incorporate measures to protect solar access from shading by neighboring structures and trees, thereby facilitating the use of passive or active solar systems.
- k. Provide incentives such as expedited processing for facilities that use renewable energy sources. Work with State and Federal agencies to secure tax exemptions, tax rebates, or other financial incentives for such facilities.
- l. Preserve and encourage planting trees in neighborhoods to provide shade in summer and reduce heat loss in winter. Successful methods include placing trees to the west and northwest of houses to shade from the hot summer sun and grouping trees to protect them from harsh elements and support their longevity. Trees can reduce air temperatures 5–10° F from shading and evapo-transpiration (water in leaves converting into vapor, cooling the air).

Transportation Measures

- m. Promote transit routes and link neighborhoods with transit.
- n. Encourage businesses and public agencies to offer telecommuting as a work alternative, and allow corporate satellite work centers near housing concentrations to enable residents who are employees of out-of-city businesses to reduce their commutes.
- o. Require new development to incorporate features that reduce energy used for transportation, including pedestrian and bicycle pathways, and access to transit (where available).
- p. Include recycled and energy-conserving materials for road construction and repair, as well as resource-efficient materials, such as rubberized asphalt concrete and pervious pavement, in road repair and construction where it is cost effective and feasible.
- q. Work with Omnitrans to provide turnouts for transit stops.
- r. Pursue traffic signal timing coordination as a means of improving traffic and reducing vehicle idling times.
- s. As appropriate, require new development and redevelopment projects to address the following: bicycle and pedestrian access internally and to other areas; safe access to public transportation and construction of paths that connect with other non-motorized routes; safe road crossings at major intersections for school children and seniors; and secure, weatherproof bicycle storage facilities. Ensure that such facilities will have ongoing maintenance.
- t. Support and participate in the development of intermodal transit hubs that expand alternative transportation use.
- u. Encourage the use of public transit and alternative modes of transportation through land use designations and zoning which cluster employment centers with a mix of other uses, and project design that incorporates car pool areas, "park and ride" facilities and similar incentives.
- v. Ensure that transit systems provide for the storage of bicycles on transit as well as at transit centers.



- w. Work with Omnitrans to post current schedules and maps at all transit stops and other key locations, to make real-time arrival information available to riders, and to provide shelters that adequately protect riders from inclement weather.

City Operations Measures

- x. Minimize Loma Linda's contributions to greenhouse gas emissions by shifting to low-carbon and renewable fuels, and employing zero-emission technologies, where feasible in City purchasing and ongoing operations and maintenance activities.
- y. Provide incentives for City employees to carpool to work.
- z. Incorporate energy efficiency as a key criterion in the City's procurement process.