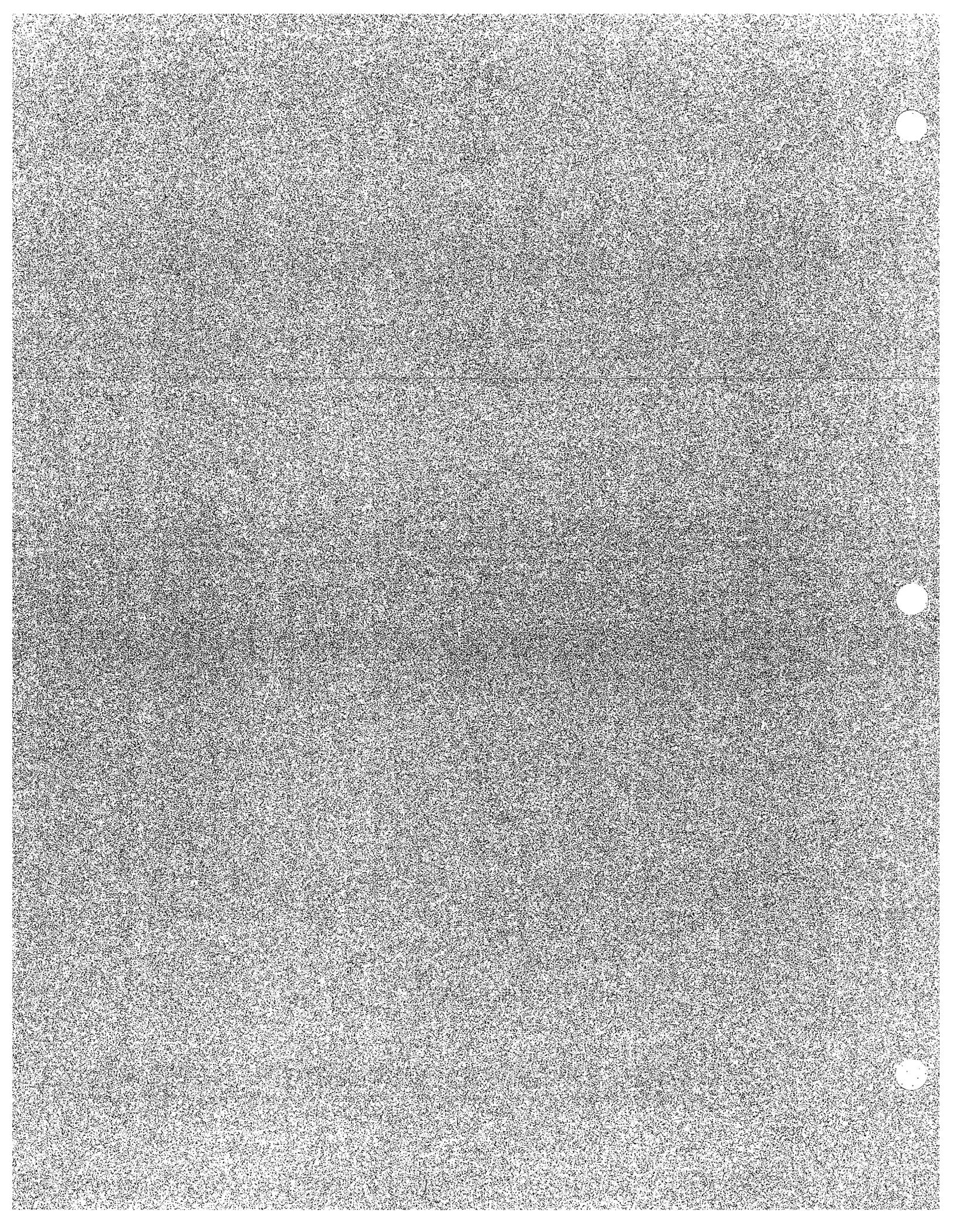


7.0 OPEN SPACE AND CONSERVATION ELEMENT

REDLANDS GENERAL PLAN



7.0 OPEN SPACE AND CONSERVATION ELEMENT

Several types of open space or areas identified for conservation are shown on the General Plan Diagram, including Parks/Golf Courses, Agriculture, Flood Control/Construction Aggregates, Conservation/Habitat Preservation, and Resource Conservation. These land use categories are described more fully in Section 4, Land Use Element.

In addition to the General Plan Diagram, seven figures depict open space or conservation areas throughout the Planning Area. These are found in the General Plan and associated with Master Environmental Assessment (MEA) and include GP Figure 8.2, Slope, GP Figure 7.2, Biotic Resources, GP Figure 8.1, Environmental Hazards, MEA Figure 5.2, Agricultural Lands, and MEA Figure 10.1, Archaeologic Sensitivity.

The Citizens of Redlands, continuing their founders' heritage, place a high value on scenic resources, open space (especially citrus preservation), parks and recreation lands. This commitment was documented by the passage of a bond measure in 1987 for the purpose of acquisition of land for parks and open space.

Integration of the Open Space Element and Conservation Element

In function and content, the Open Space Element and Conservation Element often overlap. The Conservation Element is oriented toward the management of natural resources to prevent waste, destruction or neglect. The Open Space Element, in contrast, emphasizes open space as a land use and requires that preservation and management of natural resources be considered in land use planning and decision-making. This combined Open Space and Conservation Element describes conservation practices within the state-designated types of open space described below, meeting the requirements of both elements. In addition, Redlands' archaeological resources are considered.

Cross-Reference to Other Elements

Issues concerning open space for public health and safety are fully described in the Health and Safety Element. Preservation of historic resources is considered in the City Design and Preservation Element. Open space districts are defined in the Land Use Element.

State Classification of Open Space

State law requires that four types of open space be analyzed in the Open Space Element. Open space land is any parcel or area of land or water that is essentially unimproved and devoted to open space use, which may include:

- Open space for outdoor recreation including areas of outstanding scenic and cultural value, areas suited for parks/recreation purposes, areas which link major recreation and open space reservations such as utility easements, banks of rivers and streams, trails and scenic highway corridors.
- Open space for the preservation of conservation of natural resources, including, but not limited to, preservation of nature, wildlife migration, riparian, scenery, and points of interest.
- Open space for the managed production of resources, including, but not limited to, agricultural lands.
- Open space for public health and safety such as flood plains, watersheds, earthquake fault zones, and unstable soil areas.

7.10 Parks and Recreational Open Space

This section contains policies for parks, golf courses, and recreation purposes, including areas that serve as links between major recreation and open space reservations, such as trails, and areas of outstanding scenic and cultural value and corresponds to the "open space for outdoor recreation" category in State Planning Law. Land acquired or dedicated for permanent agricultural use, even if part of a park, is described under Section 7.40, Managed Production of Resources. Open space reservations could include term utility easements, and banks of rivers and streams.

The General Plan Diagram uses circles or polygons with rounded corners to indicate proposed parks. At some locations more than one site in the vicinity of the symbol may be appropriate and could be approved without amending the General Plan. Pocket parks (two acres or less) are not shown on the General Plan Diagram. A complete listing of parks is found in GP Table 7.1.

Many of the park and recreational open space policies and proposals are taken from the June 1987 Park and Open Space Plan adopted in principle by the City Council.

Standards

Neighborhood parks are designed primarily to meet the needs of elementary- school-age-children households within one mile. These parks include picnic and play areas. The seven existing parks range from five to 17 acres. The Plan proposes three additional parks ranging from eight to 15 acres. It is recommended that, where possible, neighborhood parks be located in conjunction with schools. A broadly held standard for park acreage in California is 10-15 acres.

Community parks serve all ages and may include parklike landscaped areas, fields, courts, and large play areas. The four developed community parks and two partially developed sites range from 11 to 27 acres and also serve as neighborhood parks for nearby residents. The California standard recommends 15 to 30 acres for these parks. Three additional community parks would range from 20 to 25 acres.

City parks serve all ages and would be similar to community parks but broader in range of activities. The Plan proposes two city parks ranging from 40 to 100 acres. The California standard is 100 acres. The City park proposed in San Timoteo Canyon could be a joint venture with the City of Loma Linda. The second site is in northeast Redlands at the northwest corner of Wabash and San Bernardino.

Regional parks have no standard recommendations though they are generally 150 acres and serve an entire geographical area. The Plan proposes two regional parks. The most appropriate and possible use for the two landfill sites in Redlands' Planning Area would be a joint venture between the City and San Bernardino County for the reuse of the landfill in San Timoteo Canyon and for the site at Palmetto and Nevada Streets. Methane gas migration from landfill sites should be carefully studied prior to reuse of landfill sites.

The need for additional facilities for organized sports will be met in the vicinity of Wabash Avenue and San Bernardino Avenue in northeast Redlands; at the new high school and in San Timoteo Canyon. Other proposed city and regional parks would also provide additional sports fields.

**GP Table 7.1
Existing and Proposed Parks**

Park	Neighborhood	Community	City	Regional	City Groves	Other ¹	Applicable to Acres/ 1,000 Residents Standard ² (Policy 7.10j)
EXISTING							
Brookside	9.2						9.2
Caroline Park	16.8						8.0
Centennial Park ³						30.0	3
Community Center						2.6	2
Community Park		18.2					18.2
Crafton Park	7.5						7.5
Ed Hales Park						.3	.3
Ford Park		27.0					27.0
Franklin Park						.6	.6
Jennie Davis Park	5.2						5.2
Judson/San Bernardino ³	4.75				6		12.8
Prospect Park		11.4			24		11.4
Simonds Parkway						.9	.9
Smiley Park	9.2						9.2
Sylvan Park		23.3					23.3
Texonia Park	8.8						8.8
Orange Avenue Farm ³		18.7					18.7
San Timoteo Canyon ³						39.0	13.0
Sunset Hills ³						40.0	5.0
Lincoln/Laramie ³						.8	.8
Crafton Hills ³						238	25
Amethyst/Hwy 38 ³ Scout House		27.1					17.0
Texas Armory						2.0	0
The Terrace						2.5	2.5

1 - Other for proposed Parks = flood control, natural for viewing, pocket (mini) parkland. Other for Existing Parks = Natural areas/mini pocket parks; 2 - Land not applicable to the standard consists of steep hillsides, flood control area, and pocket parks that may be valuable components of the parks system but are not suited for intensive use; 3 - Acquired but undeveloped parks; 4 - Proposed but undeveloped parks.

**GP Table 7.1
Existing and Proposed Parks (Continued)**

Park	Neighborhood	Community	City	Regional	City Groves	Other ¹	Applicable to Acres/ 1,000 Residents Standard ² (Policy 7.10j)
Palmetto/Nevada ³				80		16.7	80
Pioneer/Wabash San Bernardino ³			90		10		90
Texas/Webster					13		0
Fifth Ave.					13		0
San Bernardino/Tennessee					10		0
I-10/California					5		0
Nevada/Palmetto					16.7		0
Olive Ave.					3.75		0
9 Elementary Schools ⁵	28.0						28.0
3 Junior Highs 3 High Schools ⁵		50.0					50.0
Subtotal	89.45	175.7	90	80	101.5	373.4	477.4
PROPOSED							
San Timoteo ⁴ Canyon Jt.			40.0			30.0	40.0
West Redlands ⁴	8.0						8.0
Wabash at I-10 ⁴	16					2.0	16
Mission/Zanja ⁴						.7	.7
Zanja Det. Basin ⁴		20				20	20
Mentone ⁴		20.0					20.0
Sand Canyon Area ⁴	15						15
Live Oak Canyon ⁴	12.0						12.0
Greenspot ⁴		25.0					25.0
Northeast Airport ⁴						60.0	30.0
Palmetto/Nevada ⁴				80		16.7	80
Pioneer/Wabash San Bernardino ^{3/4}			66				66
San Tim Landfill ⁴				75.0			75.0
Elementary ⁴	15.0						15
Subtotal	50	65	40	75	0	110.7	260.7
Total at Buildout	140.45	240.7	130	155	101.5	484.1	738.1

1 Other for proposed Parks = flood control, natural for viewing, pocket (mini) parkland. Other for Existing Parks = Natural areas/mini pocket parks; 2 Land not applicable to the standard consists of steep hillsides, flood control area, and pocket parks that may be valuable components of the parks system but are not suited for intensive use; 3 Acquired but undeveloped parks; 4 Proposed but undeveloped parks; 5 School site area is assigned half-credit toward meeting the acres per thousand residents standard, consistent with the 1987 Recreation Element. Acreage shown is 50% of recreation area.

GP Table 7.2 Proposed Parks: Sites and Facilities	
<p><u>NEIGHBORHOOD PARKS</u></p> <p>West Redlands:</p> <p>Sand Canyon Area:</p> <p>Live Oak Canyon:</p>	<p>A few sites remain for a neighborhood park to serve the medium-density area located north of Brookside Avenue between Center and Alabama.</p> <p>The residential area in the vicinity of San Canyon should include a 15 acre park.</p> <p>The neighborhood east of Redlands Country Club lacks park service, but good sites remain south of the subdivided area and near proposed trail system. A 12 acre park could be combined with natural open space areas.</p>
<p><u>COMMUNITY PARKS</u></p> <p>Zanja Detention Basin:</p> <p>Mentone:</p> <p>Greenspot:</p>	<p>By adding to the acreage needed for flood control, all or a portion of the basin could have park value or be used for athletic facilities.</p> <p>A community park on Nice Avenue would be a major recreation facility oriented to Mentone (Note: There is a sports field site near Amethyst and Highway 38 which might serve this same purpose.)</p> <p>A community park may be appropriate to serve the Greenspot area.</p>
<p><u>CITY PARKS</u></p> <p>San Timoteo Canyon:</p>	<p>This proposed site has been considered good park land with citrus preservation for future development. It could be a strong possibility as a joint City venture with Loma Linda or developments across the Riverside County line.</p>
<p><u>REGIONAL PARKS</u></p> <p>San Timoteo Canyon:</p>	<p>This proposed park site is the County Landfill site and exists on the County plan for a park site. It could be a joint venture between the City and the County.</p>
<p><u>OTHER</u></p>	<p>Mini or pocket parks should be located throughout the City for neighborhood convenience. Equally valuable to the City are bridle trails, jogging trails, linear parks along the Santa Ana Wash, medians, greenbelts, right-of-way, easement, wash area, scenic viewpoints near and far.</p>

The City's efforts to acquire more parkland and open space have been led by the Open Space Committee of the Redlands Parks Commission which was designated to recommend acquisition of land in accordance with the allocation of funds specified in Measure O, the Open Space and Park Land Acquisition measure approved by voters in 1987. Land allocation percentages of the \$7.2 million bond were as follows: citrus preservation, 22 percent; expanded parks and recreation, 27 percent; natural area preservation, 15 percent; sports complex, 14 percent; strip parks and trails, 12 percent; and City entrance land, 9 percent. These percentages were established by City Council based upon community survey.

Golf Courses

The General Plan anticipates three 18-hole golf courses in addition to the private Redlands Country Club course, thus meeting the traditional standard of one golf course per 25,000 residents. The site adjoining the Santa Ana Wash north of Mentone (160 acres) is within the Redlands Airport noise impact area and is envisioned as a municipal course. The Greenspot (204 acres) and San Timoteo Canyon (140 acres) golf courses are expected to be developed in conjunction with large residential subdivisions. The location of the Mentone and Greenspot golf courses are schematically shown on the land use map reflecting a non-specific site. A golf course in San Timoteo Canyon is also shown on the land use Diagram in a non-specific location.

Guiding Policies: Parks and Recreational Open Space

- 7.10a Create a high quality, diversified park system that enhances Redlands' unique attributes.
- 7.10b Provide adequate park acreage and recreation facilities conveniently accessible to all present and future residents.
- 7.10c Enhance the presence of natural and recreational opportunities in the City and increase park use by selecting new, highly accessible locations for parks.
- 7.10d Identify the needs of special user groups, such as the disabled and elderly, and address these in park and recreation facility development.
- 7.10e Minimize substitution of private recreation facilities for developer fee payment or park dedication to ensure that a public park system will be permanently available to the entire community.
- 7.10f Encourage preservation of natural areas within and outside the Planning Area as regional parks or nature preserves.
- 7.10g Review park standards periodically to determine whether needs are being satisfied and how long-term costs will be met.
- 7.10h Continue cooperative efforts with the Redlands Unified School District through joint use agreements for park and recreational facilities. Locate new neighborhood parks in conjunction with elementary or middle schools wherever feasible.

Although school/park areas are not available for public use at all times and do not contain complete park facilities, substantial cost savings justify shared use.

- 7.10i Equitably share the cost of improved park standards between existing and new residents, businesses, and property owners.

Implementing Policies: Parks and Recreational Open Space

- 7.10j Provide 5 to 6 acres of neighborhood, community, and city park area for each 1,000 Planning Area residents. This standard excludes specialized, low use park acreage and includes half of the area of school sites.

If all parks designated on the General Plan Diagram are acquired, there will be 7.9 acres per 1,000 residents at buildout vs. 7.2 acres existing (developed and undeveloped) in 1994 (City population only). When considering only developed parks, (189 acres) there are approximately 3 acres per 1,000.

- 7.10k Where suitable land is available at acceptable cost, provide all residential areas with a neighborhood/community park (8 or more acres where available).
- 7.10l Calculate park fees to enable purchase of acreage and provision of off-site improvements for 5 acres of park land per 1,000 residents added.

State law (Quimby Act) allows the City to require dedication or payment of in-lieu fees sufficient to buy and provide off-site improvements for a maximum of 3 acres per 1,000 new residents if existing parks are at or below this standard and up to 5 acres if a higher standard has been maintained. Fees, even if updated annually, are rarely sufficient; appraisals at the time a final

subdivision map is recorded are authorized by the law.

- 7.10m** Continue levying a parks and open space fee on nonresidential development commensurate with expected use of park and recreational facilities by employees.

A number of California cities collect such fees.

- 7.10n** Seek any available State and federal grant assistance in implementing the parks and open space proposals of the General Plan.

State bond funds available to Redlands have been committed (1991).

- 7.10o** Use available techniques to minimize acquisition costs.

Sale below appraised market value ("bargain sale") to a non-profit land trust that re-sells to the City can provide tax savings to the seller.

- 7.10p** Continue annual review of five-year plan recommendations by Strategic Planning/Open Space Committee of Parks Commission for needs and available funding mechanisms.

- 7.10q** Continue the dedication of land along the Santa Ana bluff for a continuous linear park to be used as picnic and scenic area, and trail.

- 7.11r** Encourage the development through acquisition and/or dedication of a linear park along the Zanja and the railroad right-of-way.

7.11 Trails

The City of Redlands has a long tradition in the use of trails by bicyclists, equestrians, hikers, and joggers. Many trails are unmarked or unidentified. Other trail systems are identified such as the beautifully illustrated Bridle Trail map of Isaac Ford commissioned in 1941 by the Chamber of Commerce. The existing trails can provide the framework for a system of scenic pathways that will enhance health, safety, and recreational enjoyment of the community.

A multi-use Master Plan of trails will expand and enhance individuals' opportunities for recreation, thereby improving the quality of life. With the increased awareness of the health benefits of walking and jogging, as well as the growing recreational use of bicycles, trails become more valuable to a greater portion of the community.

Concern about health is also reflected in the efforts to improve air quality. This has led to adoption of the Regional Air Quality Plan, from which policies have been adapted and included in the Health and Safety Element. Policies call for the provision of bicycle and pedestrian pathways to promote nonmotorized transportation and lessen dependency on private automobile use. These routes are to link activity centers to residential development. (See Section 8.12, Air Quality and Ground Transportation, and Section 8.14, Air Quality and Land Use.)

Trails can also serve as emergency evacuation routes in the event of a catastrophe that may make some trafficways impassable.

Rail and trail corridors designated on the General Plan Diagram have existing or proposed right-of-ways that at different locations and times may include either or both facilities. Five corridors are shown:

- ▶ Santa Ana Wash blufftop adjoining the proposed Scenic Drive;
- ▶ Santa Fe Railroad which provides freight service to Mentone and is proposed as a future commuter rail line;

- ▶ Mill Creek Zanja (Sankee), the historic irrigation ditch;
- ▶ San Timoteo Canyon adjoining the San Timoteo Creek; and
- ▶ Southern Pacific Railroad mainline.

A trails map was prepared by a City Council appointed Trails Committee and adopted by the City Council on October 7, 1992. The Trails Map (See Figure 7.1) identifies the general locations of Regional Trunk Trails and Primary Community Trails within the planning area. The Committee recognized four major types of trails; Regional Trunk Trails, Primary Community Trails, Secondary Community Trails and Connector Trails. The definition of these types of trails are as follows:

- Regional Trunk Trail - a trail which originates out of city and terminates out of city, but passes through the City of Redlands. Generally considered to be of regional significance, linking cities to regional amenities. This type of trail usually has been defined by agencies beyond Redlands, such as San Bernardino County. Examples of this kind of trail are the Santa Ana River Trail and the San Timoteo Creek Trail.
- Primary Community Trail - a trail which originates within the City of Redlands and terminates at one of the following:
 - a. an entrance to a Regional Trunk Trail (thus giving the community access to the regional amenities).
 - b. a major trail traffic generator (recreational site, school, park, equestrian center, business district).

Examples of this kind of trail are the Downtown Zanja Greenway and children's trail, the Sunset Hills trails connecting the equestrian center and residential area with the regional trail, and the trails described in the East Valley Corridor Plan.

- Secondary Community Trail - (a.k.a. local feeder trail) a trail which provides a local neighborhood with routes for recreation, or access to primary trails. Usually this type originates within a residential area and experiences lighter usage than a primary trail. Optimally, these trails are designed in a loop configuration and located in scenic areas to maximize pleasurable usage.

Examples of this kind of trail are the loops within the Sunset Hills Development which augment the primary trails.

- Connector Trail - a short section of trail route which allows the linkage of two sections of primary and/or secondary community trail. This designation carries the connotation of short linkage which might not be of the same standard as a formal primary or secondary trail, but which allows users to "connect" with the nearby trail.

Examples of this type of connector trail might be a driveway, roadway, or bridge.

**FOR PLANNED TRAILS
SEE SEPARATE PDF**

The Trails Map within the General Plan includes only Regional Trunk Trails and Primary Community Trails. Secondary Community Trails and Connector Trails will be incorporated in the Trails Master Plan as described in Implementing Policies 7.11d and 7.11k.

The following Regional Trunk Trails and Primary Community Trails are depicted on the Trails Map:

Regional Trails

1. Santa Ana Regional Trail
2. San Timoteo Creek Regional Trail
3. Live Oak Canyon Regional Trail
4. Crafton Hills/Zanja Peak Regional Trail
5. South Hills Regional Trail Along Edison Easement

Primary Community Trails

1. Downtown Zanja Trail
2. East Valley Corridor Trails
3. Deer Path Trail and Sunset Hills Signature Ridge Trail
4. Oak Grove Trail
5. Pilgrim Road Trail
6. Garden Street to Panorama Point Trail
7. Wabash to Sand Canyon Trail
8. Caroline Park to Oak Grove Trail
 - a) Ridge Trail
 - b) Edgemont Climb Trail
 - c) Hermit Canyon Trail
 - d) Quail Canyon Trail
9. Crafton Hills Reservoir Trail
10. Church Street to Panorama Point Trail
11. Alessandro Bridge to Treemont/South Hills Trail

Guiding Policies: Trails

- 7.11a** Create and maintain a system of trails serving both recreational and emergency access needs. The system is to accommodate walking, hiking, jogging, and equestrian and bicycle use.
- 7.11b** Prepare a Trails Plan depicting regional multi-purpose trails, community trails, local feeder trails, and including design standards.
- 7.11c** It is the intent of the General Plan Trails Component of the Open Space and Conservation Element, and the policy of the implementing agency to work with landowners to develop, acquire, and maintain the trail system.

Implementing Policies: Trails

- 7.11d** The Trails Plan (Figure 7.1) designates and generally locates the Regional Trunk Trails and Primary Community Trails within the Redlands Planning Areas. A Trails Master Plan should be developed to show all types of trails including Secondary Community Trails and Connector Trails.
- 7.11e** Establish guidelines and standards for trails.

- 7.11f Establish agreement with public agencies and private entities for development and maintenance of trails in rights-of-way and utility corridors.
- 7.11g Encourage creation of a non-profit organization to assist in developing and managing the trails system.
- 7.11h Seek grants and alternative funding mechanisms for trail development and maintenance.
- 7.11i Consider referring projects to the Parks Commission for review and recommendations of trails.
- 7.11j Coordinate location of trails to relate to neighboring properties.
- 7.11k Review new development proposals for compliance with Trails Master Plan and provide for right-of-way dedication and improvement/development of trails.
- 7.11l Consider recreational amenities such as rest areas, benches, water facilities, and trail hitching posts to be incorporated in Master Plan trails.
- 7.11m Locate trail rights-of-way with concern for safety, privacy, convenience, preservation of natural vegetation and topography, and work with landowners on development proposals to incorporate and provide for continuous multi-use trail system.

Policy 7.21v in Section 7.21, Biotic Resources, specifies coordination of trail planning with habitat and species protection.
- 7.11n The trails incorporated in the 1972 General Plan shall continue to exist, as an interim policy, until the Trail Master Plan is adopted by City Council.
- 7.11o Expand street landscape standards to include trail landscape standards.

7.20 Preservation of Natural Resources

The natural resources for which policies of preservation have been designed include biotic resources (including vegetation, wildlife, and habitats), water resources, and energy resources. Preservation of each of these resources will contribute to the preservation of open space within the Planning Area. Waste management and recycling are also addressed in this section, since informed consumption can preserve natural resources by preventing overproduction of goods and by reduction in the production of nonrecyclable materials. In addition, the promotion of the reuse of recyclable materials can diminish the need for the use of virgin materials, and can aid in preserving as open space those lands that might otherwise be needed as landfill.

7.21 Biotic Resources

Prior to European settlement in the San Bernardino Valley, the Santa Ana River channel was lined with a leafy border of alders, sycamores, cottonwoods, and willows along an alignment which would now be centered in the Santa Ana Wash. The channel was a dominant landscape feature which contrasted with the Valley floor beyond, comprised of a series of dry, brush-covered areas separated by stretches of moist or swampy land. In general, prior to the introduction of widespread irrigation, which distributed water evenly across the area, the extreme dry and wet areas were more extensive than they are today.

The naturally occurring biotic communities within the Planning Area are principally defined by the climate, which is typical of Southern California inland areas. Mild winters, low annual rainfall, and prolonged, dry summers all profoundly influence the vegetative make-up and, consequently, the wildlife supported by it. Since

the time of European settlement, the vegetation has been dramatically altered, replaced by urban development and agriculture. Animal populations that have not been eliminated have been generally diminished, and most species have been displaced, suffering a loss of range. Remnants of native vegetation, found primarily in riparian areas, are today interspersed with introduced annual grasses, shrubs, or trees, and agricultural fields, all of which provide some habitat for remaining animals.

The Redlands Planning Area is fortunate in being surrounded by remnants of past natural communities, and by some of the surviving species characteristic of these habitats. Most of these valued habitats are found along waterways and serve as wildlife corridors in addition to habitat for the species which grow or dwell within them. To the north, the Santa Ana River Wash and Mill Creek provide habitat and function as wildlife corridors which connect the Wash and Creek habitats with the wildlands of the San Bernardino National Forest.

The Crafton Hills, whose slopes are covered primarily with introduced European species, perform an important role as a physical link between the Santa Ana River-Mill Creek-San Bernardino Mountains habitats and the Live Oak-San Timoteo canyons-Badlands area which frames the southern Planning Area. Wildlife, including larger mammals such as mule deer and mountain lion, are thought to traverse much of the corridor from the San Bernardino Mountains to the Badlands, a route they can travel in relative isolation from humans.

San Timoteo and Live Oak canyons each contain remnants of past natural communities of regional importance. The Badlands, while physically peripheral to the Planning Area, is ecologically linked with San Timoteo and Live Oak canyons, sharing some of the same vegetative associations and wildlife. San Timoteo Canyon Creek reconnects with the Santa Ana River west of the Planning Area, closing the circle which outlines a rough ring of habitat areas and wildlife corridors around the Planning Area.

The Zanja (known locally as the "Sankee") is a waterway which splinters to the southwest of Mill Creek's main channel north of the Crafton Hills, flowing through the heart of Redlands. In different reaches, the stream flows variously above and below ground, in concrete channels and along natural bottomed channels, and possesses varying vegetation, wildlife, and habitat values. Restoration of the Zanja along part or all of its length would be anticipated to improve its habitat values where it flows above ground. The Zanja joins with other drainages, finally flowing into the Santa Ana River west of the Planning Area. (See Section 8.40, Drainage and Flooding.)

Although comprehensive biological mapping for the Planning Area has not been prepared, GP Figure 7.2 and GP Table 7.3 show and define areas of identified valued habitat, wildlife corridors, and potential riparian restoration, as identified by the State Department of Fish and Game (DFG) and local environmental groups. General locations of special status species are also shown, where information was available. This figure is not intended to serve as a substitute for an onsite biotic resources inventory for specific development projects, but rather as a general reference suggesting the types of species and habitats which may be present.

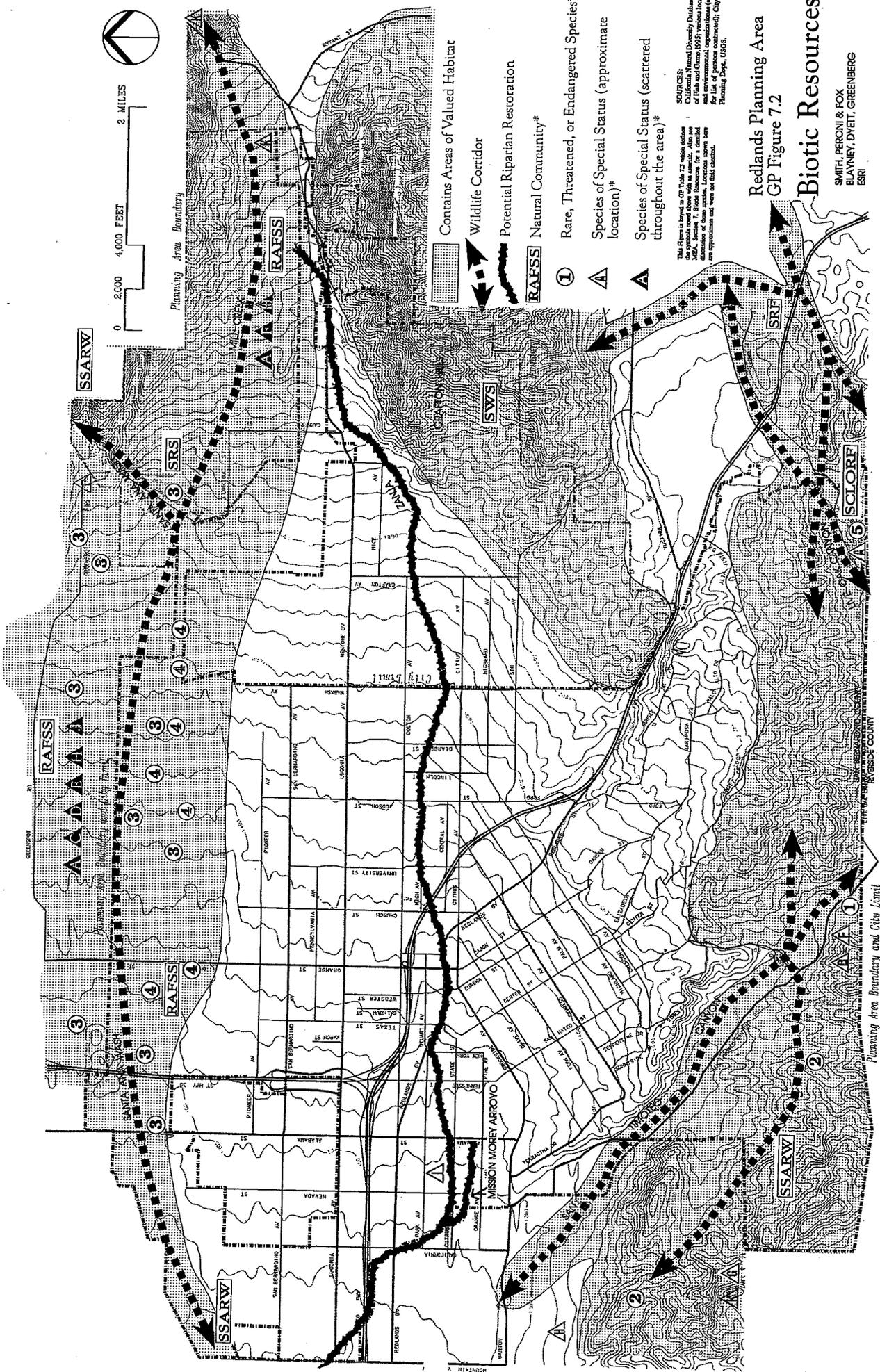
Guiding Policies: Biotic Resources

7.21a Minimize disruption of wildlife and valued habitat throughout the Planning Area.

Ranging from "common" to a legal status of Endangered, Redlands' wildlife species and habitats are valuable biotic resources, among which are several species unique to the region. Implementing policies designed to achieve their continued viability are specified below.

7.21b Preserve, protect, and enhance natural communities of special status.

Eight natural communities of special status have been identified within the Planning Area (1995) and are shown on GP Figure 7.2. These include Riversidean Alluvial Fan Sage Scrub, Southern Coast Live Oak Riparian Forest, Southern Sycamore Alder Riparian Woodland,



0 2000 4000 FEET
0 2 MILES

Planning Area Boundary

- Contains Areas of Valued Habitat
- Wildlife Corridor
- Potential Riparian Restoration
- Natural Community*
- Rare, Threatened, or Endangered Species*
- Species of Special Status (approximate location)*
- Species of Special Status (scattered throughout the area)*

SOURCES:
 California Natural Diversity Database, 1995D,
 California Natural Diversity Database, 1995D,
 of Fish and Game, 1995; various local, state,
 and environmental organizations (see MESA
 for list of persons contacted); City of Redlands
 Planning Dept., 1998b.

Redlands Planning Area
 GP Figure 7.2

Biotic Resources
 SMITH, PERONI & FOX
 BLAYNEY, DYETT, GREENBERG
 ESRI

Planning Area Boundary and City Limit

GP TABLE 7.3

RARE, THREATENED, OR ENDANGERED SPECIES and SPECIES OF SPECIAL STATUS WITHIN, ADJACENT TO, OR POSSIBLY PRESENT WITHIN THE PLANNING AREA¹**Natural Communities**

RAFSS	Riversidean Alluvial Fan Sage Scrub
SCLORF	Southern Coast Live Oak Riparian Forest
SRS	Southern Riparian Scrub
SSARW	Southern Sycamore Alder Riparian Woodland
SWS	Southern Willow Scrub
CLORF	Canyon Live Oak Ravine Forest
SRF	Southern Riparian Forest
SCWRF	Southern Cottonwood Willow Riparian Forest

Plants

Map ID 2	Nevin's Barberry
Map ID 3	Santa Ana River Woolly Star
Map ID 4	Slender-horned Spineflower
Map ID G	Payson's Jewelflower
Map ID J	Parish's Bush Mallow
Map ID K	Perry's Spineflower

Birds

Unknown	Black-shouldered Kite
Map ID A	California Gnatcatcher
Unknown	Western Yellow Billed Cuckoo
Map ID B	Cooper's Hawk
Unknown	Ferruginous Hawk
Map ID C	Golden Eagle
Map ID 1	Least Bell's Vireo
Unknown	Long-eared Owl
Map ID L	Loggerhead Shrike
Unknown	Prairie Falcon
Map ID I	Tri-colored Blackbird
Unknown	Willow Flycatcher
Unknown	Yellow-breasted chat

Mammals

Map ID D	Los Angeles Pocket Mouse
Map ID E	Merriam's Kangaroo Rat
Map ID 5	Stephen's Kangaroo Rat

Reptiles

Map ID F	Orange-throated Whiptail
Map ID H	San Diego Horned Lizard

¹ Species without Map ID numbers have no known specific location but have been seen within the Planning Area.

Southern Willow Scrub, Southern Riparian Scrub, Canyon Live Oak Ravine Forest, Southern Riparian Forest, and Southern Cottonwood Willow Riparian Forest. These communities are remnants of past vegetative complexes which were more widely distributed, and provide habitat to a number of native creatures.

- 7.21c** Recognize the links between biotic resources in discrete locations throughout Redlands.

Although now divided by roadways and expanses of urban development, the remaining open space and undeveloped land within the Planning Area was once part of an interlinked regional ecosystem. The genetic flow between these areas persists, although at a greatly reduced level, and impacts on any portion of the system will affect the rest of the system. Environmental review for projects that will replace habitat with other uses should consider the impacts on seemingly remote sites as part of the cumulative impacts of a project, since study may show that remote sites are actually linked. The Master Biotic Management Plan is anticipated to document the ecosystem dynamics of the Planning Area.

- 7.21d** Preserve, protect, and enhance wildlife corridors connecting the San Bernardino National Forest, Santa Ana River Wash, Crafton Hills, San Timoteo/Live Oak Canyons, the Badlands, and other open space areas.

Without corridors allowing movement between discrete habitat areas, it is likely that lack of genetic diversity over time would lead to the smaller, isolated habitat areas becoming devoid of wildlife, or inhabited by individual members of species in a weakened state with little potential for survival or adaptation. The maintenance and enhancement of these corridors includes implementation of undercrossings, as specified below in Policy 7.21j. General locations of known corridors are shown on GP Figure 7.2.

- 7.21e** Preserve, restore, protect, and enhance riparian corridors throughout the Planning Area.

Riparian corridors not only serve as wildlife corridors, but also possess intrinsic habitat value and aesthetic appeal. Throughout California significant amounts of riparian vegetation have been lost to urbanization in the last century, although a move towards urban stream restoration is underway in the State, slowing the losses. Programs include liberating underground streams and vegetation plans, often coordinated with the provision of streamside trails. Grants are available through the Department of Water Resources' Urban Stream Restoration Program for projects which restore or enhance the aesthetic, recreational, fish, and wildlife values of waterways. Planning Area riparian corridor locations may be included in the Master Biotic Management Plan.

- 7.21f** Where feasible, landscape public areas using native vegetation.

Native vegetation provides habitat for local species and tends to aid in water conservation, since native species are drought tolerant or resistant. Public areas include parkways, median strips, parks, and other City-owned or maintained green spaces. Revision of the City's Official Street Tree List is specified below, in Policy 7.21w.

Implementing Policies: Biotic Resources

- 7.21g** Prepare a Master Biotic Management Plan, including an inventory of protected and common species, and species management plans, where relevant.

The General Plan specifies a general level of species protection based on available published information, and where habitats or locations have been mapped. The Plan and related MEA/EIR provide a point of departure for more detailed, area-specific studies, which could include site inventories and maps, and may require that consulting biologists perform further study to design management plans. Additional levels of detail could be provided specifying the hitherto unknown locations of protected and common species, wildlife corridors, riparian corridors and wetlands, and documenting the ecosystem dynamics of the Planning Area.

- 7.21h** Require a biological assessment of any proposed project site where species or the habitat of species defined as sensitive or special status by the Department of Fish and Game or the U.S. Fish and Wildlife Service might be present.

Listings of sensitive and special status species change from year to year, but might include birds, animals, and plants such as the California Gnatcatcher, Least Bell's Vireo, San Diego Horned Lizard, Stephen's Kangaroo Rat, Nevin's Barberrry, Parish's Bush Mallow and Payson's Jewelflower, among those special status species thought to be present within the Planning Area in 1991.

- 7.21i** Require that proposed projects adjacent to, surrounding, or containing wetlands, riparian corridors, or wildlife corridors be subject to a site-specific analysis which will determine the appropriate size and configuration of a buffer zone.

The size and configuration of the buffer zone should be based on the characteristics and importance of the wetlands, riparian corridor, or wildlife corridor, and the proposed project, and determined in consultation with the Department of Fish and Game, U.S. Fish and Wildlife Service, and U.S. Army Corps of Engineers, as appropriate. The purpose of the buffer zone will be to ensure the long-term viability of the habitat area, and continued presence of wildlife.

- 7.21j** Construct freeway and arterial street undercrossings where necessary after identification of and as a part of establishment and preservation of wildlife corridors.

To enable wildlife to move freely throughout the Planning Area, undercrossings beneath the freeway or major thoroughfares may be necessary. This is particularly evident between the Crafton Hills and San Timoteo/Live Oak canyons-Badlands area, which are separated by the I-10 Freeway. Undercrossings should be designed in consultation with biologists who understand the requirements of the species.

- 7.21k** Enhance and restore the Zanja and tributary drainages as riparian corridors, where feasible, to provide habitat as well as recreational and aesthetic value.

The Zanja crosses the Planning Area in both underground and aboveground segments, with varying habitat value. Channel restoration with native vegetation would be expected to improve habitat.

- 7.21l** Encourage the U.S. Army Corps of Engineers to design "soft" channel and sedimentation basins to provide habitat as well as recreational and aesthetic value.

A component of the Santa Ana Project is the construction of a 5-mile long concrete channel from San Timoteo Canyon to the Santa Ana Wash. An alternative natural channel would preserve existing wildlife corridors and provide linear parks. The natural channel also allows normal groundwater recharge.

- 7.21m** Work with the Crafton Hills Conservancy to preserve, enhance, and maintain the Crafton Hills as an ecosystem.

Policy 8.50i within Section 8.50, Health and Safety Element, Geology, Seismicity, and Soils, specifies preservation of slopes greater than 30 percent as open space. The Conservancy is committed to habitat preservation in the Crafton Hills, as well as enhancement of open space and recreational values. The Crafton Hills may be an appropriate target for a vegetation management or enhancement program; the area contains remnants of past vegetative associations but is generally covered with introduced species. The cultivation of native species could enhance habitat value, and might decrease fire risk through the reduction of flammable grasses.

- 7.21n** Coordinate open space and habitat preservation in San Timoteo and Live Oak canyons with Riverside County.

Although each is a cohesive geographic area unto itself, politically both San Timoteo and Live Oak canyons are bisected. Both canyons straddle the boundary between San Bernardino and Riverside counties. To achieve consistency in neighboring land uses, planning between the counties and the City of Redlands must be coordinated. Riverside County's Multiple Species Habitat Conservation Plan conceptually addresses the future of the area just to the south. The Badlands are proposed for inclusion in a reserve, which would stretch from the Riverside County - San Bernardino County border south to the San Jacinto Mountains. The proposed reserve includes upstream portions of San Timoteo Creek, which are identified as providing significant riparian habitats.

- 7.21o** Coordinate with the City of Yucaipa on habitat preservation along Yucaipa Creek and in Live Oak Canyon throughout its length.

Live Oak Canyon contains special status Southern Coast Live Oak Riparian Forest, as well as other habitat values. The Yucaipa sewage treatment plant, upstream of Live Oak Canyon, is currently releasing treated wastewater into Yucaipa Creek, which contributes to the preservation of Live Oak Canyon's verdant habitat areas. There is some indication that Yucaipa may in the near future engage in a greater water recycling effort, and the San Bernardino Valley Municipal Water District notes that, if successful, this effort would be expected to diminish outflows through Live Oak and San Timoteo canyons. Reduced flows could have habitat impacts.

- 7.21p** Work with the developers, biologists, and residents to implement the *Sunset Hills Deer Management Plan* in San Timoteo and Live Oak Canyon areas.

As a mitigation measure for approval of the Southeast Area Plan, preparation and implementation of a deer management plan was specified. The Sunset Hills Deer Management Plan was drafted to fulfill part of this requirement. Three conditions are described for retention of deer use within the Sunset Hills development: the Badlands deer population must persist into the indefinite future, deer must have suitable access to the area, and suitable deer habitat must be present within the development. These requirements suggest that the City should coordinate with Riverside County on land use within the Badlands, should identify and maintain wildlife corridors for deer movement, and should review development plans carefully to ensure that adequate open space within project areas is preserved.

- 7.21q** Support the U.S. Army Corps of Engineers' efforts to establish a preserve for the Santa Ana River Woolly Star as mitigation for habitat anticipated to be lost as a result of construction of the Seven Oaks Dam, and work with concerned agencies and organizations to preserve the species in the Planning Area.

Construction of the Seven Oaks Dam is expected to reduce Woolly Star habitat, which is scattered throughout the Santa Ana River Wash. Environmental review documents prepared for the Seven Oaks Dam project identified several sites in the Wash north of Redlands that may be suitable for the establishment of a Woolly Star preserve. This silver-grey plant with its characteristic star-shaped flowers is unique to the area, and is considered Endangered by both the State and Federal governments.

- 7.21r** Work with concerned agencies and organizations to preserve the Slender-horned Spineflower.

The Spineflower is considered a Federal and State Endangered Species, whose remaining known populations within the Planning Area are clustered around Orange Street north of Redlands, within the Santa Ana River Wash. According to the Scoping Project for the Santa Ana River Resource Management Plan (August 1988), there has never been a careful and thorough survey of the distribution of the Spineflower.

- 7.21s** Coordinate aggregate resource extraction with habitat preservation and protection of plant and animal species.

Policy 7.42b specifies preparation and assured implementation of a rehabilitation plan for aggregate extraction as a condition of approval of mining. The rehabilitation plan should address protection of biotic resources.

- 7.21t** Evaluate the habitat value of agricultural fields and groves prior to conversion to other uses; if habitat value is significant, consider a development plan which incorporates open space uses of similar value.

Although agricultural fields and groves are not "native" habitat, their structure and composition may mimic certain natural environments, some of which have been greatly reduced in area over the last century. A variety of displaced species thus forage or nest in these areas. For example, raptors, some of which are species of special status, are thought to hunt in agricultural fields, and Mule Deer and other mammals may browse in or pass through orchards.

- 7.21u** Make information available to residents concerning the presence and condition of special status species.

Without a larger perspective, individuals may not understand that their actions can jeopardize the condition of a plant or animal species. For example, one of the greatest threats to the San Diego Horned Lizard -- a special status species known commonly as a "horned toad" -- is confinement by humans, benignly intending to keep the creature as a pet. A public information campaign could consist of informational handouts made available at City offices or through the County Museum.

- 7.21v** Coordinate trails with preservation of habitat and protection of species sensitive to human intrusion.

Trails policies are specified in Section 7.11, and Policy 7.11m emphasizes a concern for preservation of natural vegetation and topography. The open space values which are attractive to trails users are often a result of the presence of wildlife and native vegetation, both of which may be sensitive to human disturbance. Planning for both values will ensure compatibility.

- 7.21w** Expand the City's Official Street Tree List to incorporate native trees.

The current Official Street Tree List includes a number of species from the Eastern United States, Asia, South America, the Pacific Islands, and the Mediterranean. Only a few species, including

the California Fan Palm, Knobcone Pine, and Modesto Ash are indigenous to the Western United States. As noted above in Policy 7.21f, native trees tend to tolerate drought, need less water than introduced species, and have a higher habitat value for native wildlife.

- 7.21x Explore opportunities to have nature displays along the Santa Ana River in conjunction with trails to provide environmental and habitat information.

7.22 Water Supply and Conservation

Entitlement to local water supplies includes surface water from Mill Creek and the Santa Ana River, and groundwater from wells throughout the Planning Area. As described in Section 8.20, contamination restricts the amount of groundwater available for potable use without treatment. Imported State Water Project (SWP) water is potentially available, although it is more costly than local sources and, as a regional political issue, is subject to continuing debate. Continued use of SWP Water will in time degrade water quality within the basin and create problems with wastewater discharge. The southeast portions of the City are served by Western Heights Water Company.

The long-term water supply for the City -- and for the region -- is not secured. An updated City of Redlands Water Master Plan will examine the long-term demand for, and availability of, local ground and surface waters and SWP supplies. Cumulative development in Southern California has far exceeded the availability of local water supplies, and has increased reliance on imported water. The availability of SWP water over the long-term depends in part on environmental and political variables which are not under the City of Redlands' direct control. Conservation and cooperation on a regional basis will be the key to the future quality of life.

In 1991, the fifth consecutive year of lower-than-normal rainfall in California, municipalities throughout the State implemented water conservation programs. Conservation measures, such as those described in Ordinance No. 2151, Water Conservation Plan, are intended to decrease consumption and allow existing water resources to go further. While many voluntary conservation measures depend on changes in individual behavior, larger organized efforts backed by investment -- such as construction of infrastructure to facilitate the use of reclaimed wastewater and non-potable water for irrigation of landscaping and agriculture -- can lead to substantial conservation of water resources.

Guiding Policy: Water Supply and Conservation

- 7.22a Minimize dependence on imported water by increasing entitlement in local surface sources, using wise groundwater management practices, conservation measures, and the use of reclaimed wastewater and nonpotable water for irrigation of landscaping and agriculture, where feasible.

The availability of imported State Water Project water over the long-term depends in part on environmental and political variables which are not under the City of Redlands' direct control. To ensure water service to all parts of the Planning Area, an emphasis must be placed on the use of local water supplies.

- 7.22b The City of Redlands overlies a portion of the Bunker Hill Groundwater Basin. This Basin contains in excess of 3 million acre feet of water. This local supply source must be cleaned up, used to its full potential, and protected from outside interests. This requires the cooperation of all agencies within the Basin.
- 7.22c The City of Redlands recognizes that the water sources that constitute the water supply of the City of Redlands are a limited and renewable resource subject to increasing demands; that the conservation and efficient use of urban water supplies are of statewide concern; but that planning for that use and the implementation of those plans can best be accomplished at the local level.

- 7.22d The City of Redlands believes it is in the best interest of its citizens to conserve the highest quality of water reasonably available to it for domestic use. Effort by its water users to achieve water conservation and efficient use of water will produce a sustainable lifestyle consistent with Redlands' unique heritage and community goals.

Implementing Policies: Water Supply and Conservation

- 7.22e Update the City of Redlands' Water Master Plan, including an assessment of regional demand and availability of water resources through buildout, and a comprehensive groundwater management program.

The City's 1981 Water Master Plan, updated in 1984, needs revision as a result of recent and planned population growth and development. The Water Master Plan assumed a population of about 80,000 in Redlands in the year 2000. Current 1995 City population is about 67,000. The Water Master Plan should include a component which studies groundwater issues and implements a comprehensive groundwater management program, as recommended by the Redlands 2000 report.

- 7.22f If the City's updated Water Master Plan shows water supply to be inadequate, increase supply and reduce demand or curtail development until adequate supplies are secured.

Priority would be given to increasing water supply and reducing water demand. Restrictions could be universal, with no new service connections throughout the Planning Area, or restrictions could be area-specific, to prevent costly infrastructure expansion and discourage growth in yet-unserved areas, until new supplies are developed.

- 7.22g Work with the Bear Valley Mutual Water Company, San Bernardino Valley Municipal Water District, and Western Heights Water Company to implement water conservation measures as specified in Redlands' Water Conservation Plan, Ordinance No. 2151.

An April 1991 resolution adopted by the San Bernardino Valley Municipal Water District (SBVMWD) requires Redlands and other District customers to establish and maintain a water conservation program as a prerequisite to continued use of State Water Project water. Redlands Water Conservation Plan, Ordinance No. 2151 was adopted pursuant to City's Urban Water Management Plan and State laws. The ordinance contains four stages of conservation, from voluntary conservation measures to different levels of mandatory compliance. The use of reclaimed wastewater is indirectly encouraged by exempting the use of reclaimed wastewater for golf course irrigation from irrigation restrictions. The most extreme stage of the Water Conservation Plan prohibits the issuance of new service connections and meters.

- 7.22h Coordinate with the Western Heights Water Company, East Valley Resource Conservation District, and SBVMWD to educate the public and encourage participation in voluntary water conservation measures.

The availability of information and a sense of participation in a larger cooperative effort can lead to significant changes in individual behavior.

7.23 Energy Resources and Conservation

Utilities Facilities

Southern California Edison (SCE) Company provides electrical energy and the Southern California Gas (SCG) Company provides natural gas service to the Planning Area.

SCE Company. SCE is connected with an electrical energy network known as the "Pacific Intertie grid," allowing it to import electricity from anywhere in the Western United States, if needed. Within San Bernardino County, SCE operates several thermal (oil or gas-fired) generating stations, including the significant Etiwanda power plant, and, on the south side of the mountains, eight small hydroelectric power plants. The Etiwanda power plant represents approximately 10.5 percent of the total SCE generating capacity in the County, while the hydroelectric contribution is less than one percent of the total capacity.

Within the Planning Area or immediate vicinity, SCE operates one hydroelectric facility (Mill Creek No. 1), five substations (Redlands, Smiley, Mentone, Tennessee, Zanja), one steam plant (San Bernardino), several 220 kilovolt transmission lines (portions of the Devers-San Bernardino Nos. 1 and 2, San Bernardino-Vista, Etiwanda-San Bernardino, Devers-Vista Nos. 1 and 2), and the Redlands Service Center. The 220 kilovolt transmission lines run along the western edge of the Planning Area and through the southwestern corner, stretching south from the San Bernardino Steam Plant, then east of Mountain View Avenue, and turning southeast to parallel San Timoteo Canyon Road along the southern slopes of the Canyon. These facilities are shown on maps on file with the City of Redlands.

SCG Company. SCG serves the majority of the County, and all of the Planning Area. Natural gas -- not produced within the Redlands Planning Area -- is produced in small quantities in the Chino Hills, although it is primarily imported from elsewhere in California or from out of State.

High pressure gas lines (greater than 60 pounds) run along Mountain View Avenue on the western edge of the Planning Area, turning southeast at Mission Road. At California Street the lines jog north, continuing east and south along Orange Avenue to Tennessee Street, State Street, Eureka Street, Redlands Boulevard, Reservoir Road, Wabash Avenue, Panorama Drive, and entering Yucaipa along Hampton Road and Dunlap Boulevard. Another high pressure gas line stretches along Sand Canyon Road and Crafton Avenue. Smaller gas lines carried by pipelines ranging from three to eight inches in diameter are distributed throughout most of the Planning Area. These facilities are shown on maps on file with the City of Redlands.

Energy Conservation

Energy conservation may also be viewed as a potential energy resource, since the prudent use of energy will allow greater utilization of existing resources. Conservation might include such measures as reduced demand and reduction in wasted energy, recycling, and development of new forms of energy production.

Reduced demand and reduction in wasted energy. Reducing demand and reducing wasted energy might include residential, commercial, and industrial educational outreach programs designed to inform the consumer about options for energy conservation, and energy-efficient architectural design. Transportation-related measures which lead to energy conservation might include urban design and land use patterns which reduce trips, minimizing fossil fuel use, and Transportation Systems Management (TSM) and Transportation Demand Management (TDM) measures, as described in Section 5.

Recycling. Recycling is discussed in detail in Section 7.24, and in the Source Reduction and Recycling Element. Recycling resources saves energy, since the recycling process tends to use less energy than primary production of resources. This is true of all resource types, from the more commonly recycled items such as glass, paper, aluminum, and tin to fossil-fuel-based resources such as plastics and automobile-related waste oils.

New forms of energy production. Cogeneration, waste-to-energy conversion, and development of solar or wind energy may all be possible for portions of the Redlands Planning Area. Development of cogeneration and waste-to-energy conversion might be viewed as conservation measures, since they utilize waste products which would otherwise require an input of energy for disposal. Solar or wind energy may be viewed as potentially energy conservative since the resources are "free" and unlimited, compared to nonrenewable resources, which could then be conserved for energy production in the future.

Guiding Policies: Energy Resources and Conservation

7.23a Conserve scarce or nonrenewable energy resources.

Nonrenewable resources such as fossil fuels are considered scarce in the long term, since they are finite. Many conservation measures rely on voluntary individual behavior for implementation, although some measures have the support of governmental bodies. For example, State law requires the incorporation of energy conservation features in the design of all new site development and construction.

7.23b Support San Bernardino County in implementation of its energy-related policies.

County policies emphasize active participation in current and future energy provision and conservation.

7.23c Consider energy efficiency in architectural design.

A number of past environmental documents on portions of the Redlands Planning Area have additionally specified energy-reducing measures related to architectural design and project orientation. Among those documents which can be consulted for detailed recommendations are the Crafton Hills Planned Unit Development DEIR (1984), Redlands Southeast General Plan Amendment FEIR (1987), Tentative Tract 13294 DEIR (1988) and the East Valley Corridor Specific Plan FEIR (1988).

Implementing Policies: Energy Resources and Conservation

7.23d Coordinate with Southern California Edison Company and Southern California Gas Company to educate the public about the need to conserve scarce energy resources.

Residential, commercial, and industrial educational outreach programs can present consumers with options for energy conservation. Dissemination of information can have a significant impact in reducing consumption, as awareness by individuals and businesses leads to changes in behavior.

7.23e Minimize energy consumption attributable to transportation within the Planning Area.

Policies in Section 5, the Circulation Element, commit the City to Transportation Systems Management (TSM). When implemented, TSM measures are expected to minimize trips, thus minimizing Planning Area energy consumption attributable to transportation.

7.23f Revise applicable City Codes to incorporate criteria for energy efficient design.

7.23g The City shall implement and enforce Title 24 building standards to improve energy efficiency in new or substantially remodeled construction.

7.23h Encourage the investigation and utilization of alternative energy sources to be integrated in individual project designs.

7.24 Waste Management and Recycling

Due to concerns about the shrinking availability of landfill space, the State has passed legislation intended to address the problem at its source. Assembly Bill 939, the California Integrated Waste Management Act of 1989 and its amendments, requires every City and County in the State to prepare a Source Reduction and Recycling

Element (SRRE) that identifies how the jurisdiction will meet the mandatory waste diversion goals set by the State of 25 percent by 1995 and 50 percent by 2000.

AB 939 and its amendments also requires every jurisdiction to develop a Household Hazardous Waste Element (HHWE) to plan for the proper management of hazardous wastes generated by households. The HHWE states that it is the City's objective to reduce the disposal of household hazardous waste in landfills through collection programs, landfill screening, and encouraging citizens to reduce the generation of such wastes, and promoting markets for household hazardous waste recycling.

The City of Redlands' SRRE and HHWE were developed in response to AB 939. The SRRE has been deemed adequate by the California Integrated Waste Management Board (CIWMB), and a final modification was made as required by the regulations to the 1990 waste stream data. However, due to changes in the regulations for solid waste management, the SRRE and HHWE can only be relied upon as guidance documents. As a result, the City is required to submit an annual status report to the State of programs and program performance.

Solid Waste

According to the SRRE, approximately 77,400 tons of waste was generated in the City of Redlands in 1990. Of these, 67,800 tons were disposed, and 9,600 tons were diverted, resulting in a diversion rate of 12.4 percent. The single largest component of the waste disposal stream is paper (42.4 percent) followed by other organics (23.3 percent), and yard waste (13.5 percent).

Almost all waste disposed by generators in the City is hauled by the City of Redlands Municipal Utilities Department, Solid Waste Division, as a public service. Two City annexation areas are serviced by private haulers. The City collected solid waste is disposed of at the California Street Landfill. Sources are 50 percent from residential, 42 percent from commercial, and eight percent from industry. A small amount of waste is hauled directly to County landfills by Planning Area residents and other entities.

The City has a curbside recycling program which provides pickup service of newspapers, aluminum cans, glass, cardboard and plastics, from approximately 16,000 homes. As of mid 1995, yard waste is collected from 2,100 homes. (This program is planned for expansion City wide.) In addition, the City has one drop-off center, three reverse vending machines, and a City wide office paper recycling program. There are a number of community sponsored activities also responsible for waste recycling. About 100 Redlands businesses participate in a City-sponsored office paper collection program, and cardboard recycling is provided for select businesses. Redlands also has a residential curbside collection program for Christmas trees, which are composted. The City also provides support to residents for backyard composting, recycling of appliances, and free community clean-up days.

Hazardous Waste

Household hazardous waste frequently ends up in landfills that are not intended for receipt of hazardous materials. Such materials include such common items as motor oil, weed killers, household cleaners, wood preservatives, paints and paint thinner, auto and furniture polish, chemical drain cleaners, pesticides and fertilizers, and pool supplies. It is estimated that .7 percent of the City's total waste disposal stream (by weight) is comprised of household hazardous waste.

San Bernardino County has been providing services related to household hazardous waste management since 1984. These include the maintenance of permanent collection centers (one of which is in Redlands), periodic one-day collection events, a public education and outreach program, and a load-checking program at the area's

County-owned landfills. The City intends to sign a Memorandum of Understanding with the County to cooperate with the administration of a Countywide Household Hazardous Waste management program in addition to the establishment of a City-operated permanent collection center. The City conducts screening at the California Street Landfill to reduce disposal of household hazardous waste at this site.

Other types of hazardous materials, such as pesticides or herbicides, may enter the environment indirectly. See Section 8.20, Water Quality, for a discussion of toxic chemicals accidentally introduced into the groundwater.

Guiding Policy: Waste Management and Recycling

- 7.24a** Reduce the generation of solid waste, including household hazardous waste, and recycle those materials which are used, to slow the filling of local and regional landfills.

As of 1995 solid waste is hauled by the City to the California Street landfill. Planning Area residents also use the County's Solid Waste Disposal Facility (landfill) in San Timoteo Canyon.

Implementing Policy: Waste Management and Recycling

- 7.24b** Implement measures specified in the Source Reduction and Recycling Element and the Household Hazardous Waste Element.

Adopted by City of Redlands in response to AB939 on August 2, 1994. Approved by the State on 1/25/95.

- 7.24c** Meet the mandatory waste diversion goals set by the State of 25 percent by 1995 and 50 percent by 2,000; reduce landfill disposal of household hazardous waste as much as feasibly possible.

- 7.24d** Examine alternatives for reuse of the California and San Timoteo Canyon Landfill sites after their closures.

As discussed in Section 7.10, a regional park might be one appropriate use of the site. To guarantee the safety of future site users, Policy 8.30d, Health and Safety Element, requires that methane gas monitoring will continue even after landfill closure. Near-term closure could be as early as mid-1998, although the City is considering expansion to the year 2000, and beyond to 2015. The San Timoteo Landfill has permitted refuse capacity to the year 2016.

- 7.24e** Mitigate impacts associated with expansion of existing landfills or development of new landfills to include effects on streets and highways, drainage systems, groundwater, air quality, natural resources, aesthetics, and property maintenance. Issues of peak tonnage, number of trips and types and mix of vehicles accessing the site should be assessed when considering traffic impacts. Air quality issues should include those that pertain to dust and odors. Property maintenance issues include problems of illegal dumping and loose refuse.

7.30 Preservation of Archaeologic and Paleontologic Resources

Although archaeological and paleontologic resources do not fall under the rubric of natural resources, they are protected under the California Environmental Quality Act as cultural resources. Many archaeological and paleontologic finds will occur in remaining, unexcavated open space areas within and adjacent to the Planning Area, and this fact, together with the need for strategies for the conservation of these resources, places the discussion of these cultural resources here in the combined Open Space and Conservation Element. Historic resources are considered more fully in Section 3.

The Serrano and Gabrielino. Prior to the arrival of Spanish Europeans, the Redlands Planning Area is thought to have been populated for thousands of years by the Serrano and Gabrielino peoples. Although the precise details of their lives are shrouded in time, remnants of their lifeways indicate settlement and resource procurement locations at or adjacent to reliable water sources. Likely areas for finding artifacts include springs and streams such as San Timoteo Canyon Creek, Yucaipa Creek in Live Oak Canyon, tributaries and their canyons, and adjacent to larger water bodies, such as the bluffs, terraces, and hillsides above the Santa Ana River and Mill Creek.

The Zanja. At the instigation of Franciscan missionaries, in 1820 the Serrano and Gabrielino constructed a 12-mile-long irrigation ditch, connecting the fields surrounding the Gauchama Mission Station with Mill Creek, to the east. Water from this ditch was used for domestic purposes, as well as for irrigation of the first crops planted in the San Bernardino Valley. The ditch has had several names to include the Zanja and the Sankee. The Zanja is said to be the only irrigation ditch constructed and maintained by native peoples for their own use in California during the Spanish and Mexican periods of rule.

Archaeological survey. The California Archaeological Information Center (AIC), housed in the San Bernardino County Museum, estimates that less than 10 percent of the urban area has been surveyed for archaeological finds, and perhaps 25 percent of the rural portions of the Planning Area has been surveyed. Despite the lack of systematic survey, the locations of some resources are known, although to protect these resources, the precise locations of these sites are available to the public only on a restricted basis. To allow a quick visual scan of potentially sensitive areas, however, the City and the AIC have prepared an Archaeological Resource Sensitivity Map at a general scale.

Archaeological Resource Sensitivity map. This map was developed by the AIC in conjunction with the City of Redlands, and is reproduced in the MEA as MEA Figure 10.1. It is intended to be used to quickly determine whether or not an application for development is located within an archaeologically sensitive area, defined as an area which may contain artifacts or human remains below the earth's surface. When an application is received, City planners check the project location. Projects found to be within a sensitive area require that the staff notify the applicant and send copies of the application to the AIC. After review, the AIC will either determine that no further action by the applicant is necessary, or indicate that the applicant should hire an outside consultant to develop an archaeological resource mitigation plan.

MEA Figure 10.1 shows that most of the Santa Ana River Wash, Mill Creek, Crafton Hills, and San Timoteo and Live Oak canyons have been identified as rural historic and prehistoric archaeological districts. Rural historic is a designation oriented towards farming in the historic period. Resources found in this district may include orchards still standing, water ditches, barns, or residential and industrial buildings associated with farming activities. Pre-historic archaeological districts designate the pre-historic landscape and rural agricultural landscape that still survives. Because these areas have been insufficiently studied, archaeologists are uncertain what to expect. Historic areas and historic districts are discussed in more detail in Section 3.

Paleontologic resources are the fossil remains or traces of past life forms, including both vertebrate and invertebrate species, as well as plants. These resources are found in geologic strata conducive to their preservation, typically sedimentary formations. Paleontologic resources have been identified in San Timoteo Canyon.

Guiding Policy: Archaeologic and Paleontologic Resources

7.30a Protect archaeological and paleontologic resources for their aesthetic, scientific, educational, and cultural values.

Additional policies on archaeological resources are found in Section 3, City Design and Preservation.

Implementing Policies: Archaeologic and Paleontologic Resources

- 7.30b** Using the Archaeological Resource Sensitivity Map, review proposed development projects to determine whether the site contains known prehistoric or historic cultural resources and/or to determine the potential for discovery of additional cultural resources; refer all applications affecting sensitive areas to the Archaeological Information Center for further study.

This map, compiled by the Archaeological Information Center, is on file with the City.

- 7.30c** Require that applicants for projects identified by the Archaeological Information Center as potentially affecting sensitive resource sites hire a consulting archaeologist to develop an archaeologic resource mitigation plan; monitor the project to ensure that mitigation measures are implemented.

- 7.30d** Require that areas found during construction to contain significant historic or prehistoric archaeological artifacts be examined by a qualified consulting archaeologist or historian for appropriate protection and preservation.

The California Environmental Quality Act (CEQA) requires evaluation of any archaeological resource on the site of a development project. Unique resources, as defined by State law, should be protected, either by physical measures or by locating development away from the site. A preferred preservation method involves covering a site with earth fill for potential future, leisurely excavation; immediate excavation by qualified archaeologists may be undertaken if such protection is infeasible. If human remains are recovered, State law requires immediate notification of the County coroner, and cessation of work until the situation is resolved.

- 7.30e** For projects involving Federal land, or requiring Federal permission or funding, ensure that applicants meet stricter criteria for archaeological resource review, prior to commencement of work.

Projects involving the Federal government fall under a stricter set of review standards than those projects reviewed under CEQA. Federal-related projects include, for example, all drainage improvements in which the U.S. Army Corps of Engineers has an involvement.

- 7.30f** Work with the San Bernardino County Museum to identify and protect Redlands' significant nonrenewable paleontologic resources.

The Museum has prepared paleontologic sensitivity maps for some portions of San Bernardino County.

7.40 Managed Production of Resources

Agricultural lands and lands containing construction aggregates are the two types of open space within the Planning Area to be preserved for the managed production of resources. Areas required for the recharge of groundwater basins are considered part of the flood plain, and policies on the preservation of these areas are found in Section 8.40, Health and Safety Element, Drainage and Flooding.

7.41 Agriculture

Citrus farming was Redlands' original economic base and remains a small, but not insignificant component of the economy. If any community is to retain its citrus heritage, it will be Redlands. Preservation will require

a strong commitment, including the will to regulate and to acquire, because the spread between the land payment capability of citrus and urban development will continue to grow. Citrus income is attractive to an owner who is holding for subdivision, but does not provide a competitive return on investment if an alternative is sale for development.

Despite a two-thirds decline in acreage during the previous 30 years, 4,888 acres (16 percent of the Planning Area) remain in citrus. Other agriculture (other orchard crops, row crops, livestock, dairies, and Christmas tree farms) occupies 918 acres. With relatively low cost water supplied by mutual water companies, good productivity, and 90 percent of the fruit commanding premium prices for export to Asia, the Redlands citrus industry stabilized during the 1980s. However, a majority of the citrus acreage is owned by investors, both local and absentee, who must be presumed to be holding it for urban development.

Agricultural land uses within the Planning Area are concentrated in five areas, North-West Redlands (East Valley Corridor Specific Plan Area), West Redlands, San Timoteo Canyon, North Redlands (Redlands Municipal Airport Area), and North Mentone. In an effort to maintain and preserve the agricultural industry in the Redlands area the "Agricultural Preserve" concept was developed. Within Redlands there are two levels of this concept, the Agricultural Preserve designation between the City and property owner, whereby the City provides agricultural protection through zoning regulations using agricultural preserves (see GP Figure 7.3, Agricultural Preserves) and the more formal Williamson Act program. The lands under Williamson Act contract were originally designated in 1970. Under the Williamson Act Program land owners may enter 10-year contracts to maintain open use in exchange for taxation based on agricultural use rather than market value. Contracts renew automatically each year unless the owner or the public entity (City or County) serves notice of nonrenewal, in which case the land becomes available for development 10 years hence. As of May 1995, 24 parcels within the City totaling approximately 177 acres were under Williamson Act Contract.

About 30 percent of the existing citrus is within the East Valley Corridor Area. The Specific Plan for this area calls for conversion of agricultural land for commercial and industrial development over a 40-year period. Most other citrus acreage in both the City and the County is zoned for agricultural use with a minimum parcel size of five acres.

In 1968, interested citizens involved the entire community in raising funds to purchase Prospect Park. Since then, a citizens committee of the Parks Commission has been appointed to manage the farming of the groves owned by the City. These groves are self-supporting and often profitable. Up to \$1.8 million of the \$7.2 million in open space bonds authorized in 1987 under Measure O is to be spent or has already been spent for citrus acquisition. Citrus groves currently owned by the City which are proposed to remain in citrus include the Prospect Park Grove (24 acres), Judson Grove (6 acres), Fifth Avenue Grove (13 acres), I-10/California Grove (5 acres), Texas Webster Grove (13 acres), Palmetto/Nevada Grove (16.7 acres), and Olive Avenue Grove (3.75 acres) and San Bernardino/Wabash Grove (10 acres).

Guiding Policies: Agriculture

- 7.41a** Retain the maximum feasible amount of agricultural open space for its contributions to the local economy, lifestyle, air quality, habitat value and sense of Redlands' heritage.
- 7.41b** Provide for continued operation of existing livestock/dairy farms in areas of the San Timoteo/Live Oak Canyon planning sector designated Rural Living and Very Low Density on the General Plan Diagram.
- 7.41c** Encourage retention or establishment of horse stables and riding academies in the San Timoteo/Live Oak Canyon planning sector to meet the needs of the Planning Area's equestrians.

Implementing Policies: Agriculture

- 7.41d** Employ zoning for agricultural use, City ownership, transfer of density, and zoning for rural living to maintain citrus and other croplands in production where designated on the General Plan Diagram.

Using PRDs, densities may be transferred within a parcel to preserve agricultural land. Where designated on the General Plan Diagram, viable citrus areas may be designated for preservation as a condition of development approval without reducing the number of housing units or the development to be built on the parcel.

Designated Rural Living areas in the Crafton, Live Oak Canyon, and Mentone planning sectors are primarily planted to citrus and are increasingly attractive as residential locations. At maximum densities of one housing unit per 2.5 or 5 acres, citriculture will remain viable.

- 7.41e** Encourage formation of a land trust to make the most efficient use of funds available for agricultural preservation.

Sale below appraised market value ("bargain sale") to a land trust that subsequently conveys the property to a public agency can provide attractive tax savings to a seller. Assistance in forming a land trust is available from the Trust for Public Land or similar organizations.

7.42 Construction Aggregates

The Santa Ana Wash adjoining Redlands contains high quality construction aggregates that have been mined since the 1920s. Urban preemption of prime deposits and conflicts between mining and other uses throughout California led to passage of the Surface Mining and Reclamation Act of 1975 (SMARA) which requires all cities and counties to incorporate in their General Plans the mapped designations approved by the State Mining and Geology Board.

Redlands is required by SMARA to adopt policies recognizing the importance of the identified mineral resources, clarifying the intent that this information is to be used when making land use decisions in areas designated to be of statewide or regional significance, and emphasizing the conservation and development of identified mineral deposits. Regionally significant aggregate resources within the Planning Area are shown on GP Figure 7.4.

Mining in the Santa Ana Wash is being done on both sides of the boundary between the cities of Redlands and Highland. New areas are currently being proposed for mining along the northern Planning Area boundary by Sunwest Materials and Robertsons Ready Mix. While approximately 90 percent of the land is owned by public agencies (Bureau of Land Management, San Bernardino County, City of Redlands, and San Bernardino Valley Water Conservation District), the land is leased to allow mining and (haul) roads.

In 1990 Redlands annexed the Sunwest Materials (formerly C.L. Pharris Sand and Gravel Company's Orange Street Aggregates) processing plant built two years earlier under permits issued by San Bernardino County. The annexed area also included the Old Webster Quarry which is being mined by Robertson Ready Mix under permits issued by the County of San Bernardino. Based on information presented in 1987, the California Division of Mines and Geology estimates 50-year aggregate needs in the San Bernardino Production-Consumption Region at 476 million tons vs. 10.45 billion tons potentially available as resources within the Santa Ana Wash area.

Guiding Policies: Construction Aggregates

- 7.42a** Conserve sufficient aggregate resources to allow conversion of two 50-year supplies (approximately 2400 acres) of aggregate reserves to meet the Planning Area's contribution to future regional needs.

Because most of the Planning Area's Mineral Resource Zone (MRZ) designated under SMARA is in the Santa Ana Wash, it will not be subject to urban development. Redlands will be bearing more than a proportional share of the impacts of aggregate production given the location of mining and processing operations.

- 7.42b** Manage aggregate resources to ensure that extraction results in the fewest environmental impacts. Require preparation and assured implementation of a reclamation plan for aggregate extraction sites as a condition of approval of mining.

Mining is traditionally a high impact industry that must adjust its operations to become an acceptable neighbor to urban areas. As noted in Policy 7.21s, the reclamation plan should address protection of biotic resources, as well as the inclusion of possible recreational uses.

- 7.42c** Reserve designated MRZ areas outside the Santa Ana Wash for agricultural or urban use.

Although the State Mining and Geology Board revised the boundaries of some sectors in 1987 to delete urbanized area, substantial acreage south of the blufftop is designated.

Implementing Policies: Construction Aggregates

- 7.42d** Clearly identify mineral resource areas, those areas targeted for conversion to reserves for possible future extraction, and areawide aggregate transportation routes. Policy 7.42c above indicates areas not suitable for future extraction.

Mineral resource zones (MRZs) targeted for conservation include most, but not all, of the Flood Control/Construction Aggregates Conservation/Habitat Preservation area in the Santa Ana Wash and Mill Creek Canyon as indicated on the General Plan Diagram. See Master Environmental Assessment (MEA) Figure 8.2 for precise boundaries of the MRZ within this area.

- 7.42e** Apply zoning regulations to areas identified in Policy 7.42d allowing aggregate extraction as a conditional use and prohibiting incompatible land uses in Regionally Significant Construction Aggregate Resource Areas to be conserved. Zoning should cover sufficient area for two 50-year supplies of construction aggregate reserves and be reevaluated every 10 years per CDMG Guidelines.

This policy meets a requirement of SMARA.

- 7.42f** Deny approval of surface mining permits at locations where unmitigated adverse impacts would be significantly greater than at alternative locations with the San Bernardino Production-Consumption Region.
- 7.42g** Make issuance of a surface mining permit conditional upon approval of a reclamation plan and financial assurances for reclamation in accord with Public Resource Code Section 2770.