



6

Vital Environment

Promote an open space plan that conserves the natural canyons and the hillsides to the south, the Santa Ana River and wash to the north, and the Crafton Hills and agricultural lands to the east; enables continued agriculture and citrus production; and completes the “Emerald Necklace” of open space, conserved lands, and trails around the city.

Redlands’ open spaces—the hillsides and canyons, aqueducts, farms, and the citrus groves—are highly valued. The General Plan seeks to preserve these open spaces, including those at the city’s edges, where agricultural uses and many citrus groves are located, and realize the community’s long-sought desire for a linked system of open spaces and trails around the community, forming an Emerald Necklace that provides a greenbelt for the city and is integrated with a regional open space system.

The Emerald Necklace is defined as those land uses that provide a green belt around the city and includes San Timoteo and Live Oak canyons, the Crafton Hills, agricultural lands in Crafton and San Timoteo Canyon, and the Santa Ana River and Wash. These open spaces, agricultural lands, natural habitats, conservation areas, flood plains, waterways, aqueducts, and passive and active parks make up the land uses of the Emerald Necklace, as well as the system of parks, trails, streams, farms, and citrus groves that link the Emerald Necklace to the interior of the city.



6.1 OPEN SPACE FOR CONSERVATION

Open space in the Planning Area includes any parcel or area of land or water which is devoted to an open space use as defined in the General Plan, or designated on a local, regional, or State open space plan as one of the categories of open space defined in State planning law. Open space lands may currently be in public or private ownership. The Planning Area's open space system is shown in Figure 6-1.

Open Space Areas

There are a number of open space areas in the Planning Area that provide opportunities for recreation. In many cases, recreational use coincides with resource areas.

- **San Timoteo Canyon.** The City owns 254 acres of open space in San Timoteo Canyon, paralleling San Timoteo Canyon Road between Fern Avenue and Alessandro Road. The area is a nature preserve named the San Timoteo Canyon Nature Sanctuary that is home to riparian, grassland, and hillside chaparral habitats, as well as man-made trails, observation points, eucalyptus groves, an amphitheater, and wetland areas. The sanctuary is open during daylight hours to hikers, bicyclists, and equestrian visitors.
- **Live Oak Canyon.** The City owns 338 acres of land in the Live Oak Canyon area adjacent to Oakmont Park, which it acquired between 2012 and 2015. Over 245 acres in this area have been set aside for conservation. The open space's trail system, which currently includes the Oakridge and Oakmont trails, is open to hiking, bicycling, and equestrian use, as well as other forms of passive recreation.

- **Santa Ana Wash.** The 4,000 acres of the Santa Ana River Wash makes up the largest open space area in the city. Forming the city's northern boundary, the Wash contains the Santa Ana River's floodway and accompanying flood zones. While much of the area is in a natural state, portions of the Wash are used for aggregate mining or as spreading ponds to recharge the aquifer. The Wash area is owned by a combination of federal, State, regional, and municipal governments, as well as by utilities and private interests.
- **Crafton Hills Open Space.** This area adjacent to Yucaipa Regional Park is part of the San Bernardino County open space network, and comprises land in the Crafton Hills generally above an elevation of 2,400 feet in the eastern portion of the Planning Area. This is an important open space resource in the urbanizing Redlands/Yucaipa area, and has significant value as a relatively undisturbed habitat area, a scenic resource, and a potential area for recreational open space use, as there is a recreational trail system there. The City also owns 193 acres of open space in the Crafton Hills above the Henry Tate Water Treatment Plant.

Emerald Necklace

The Emerald Necklace concept is a series of green open space and park areas surrounding the city, joined together with a special scenic road and trails system. The City has gradually acquired open space land to fulfill the concept, and in 2014 the Redlands Conservancy inaugurated the Emerald Necklace Trail and Scenic Route, a 45-mile circuit around the city, shown on Figure 7-2. The route is accessible by motorists and bicyclists and links a number of Redlands' parks, trails, and open space areas, including San Timoteo Canyon, Live Oak Canyon, the Crafton groves, the Sports Park, the Santa Ana River Wash, the Santa Ana River Trail, the bluffs and Israel Beal Park, the East Valley Corridor Multi-Purpose Trail, and Heritage Park.

Redlands' picturesque surroundings provide ample opportunities for hiking, photography, picnics, and other recreational activities.

POLICIES

Principles

- 6-P.1** Develop a balanced and integrated open space system that reflects a variety of considerations, including resource conservation, production of agriculture, recreation, aesthetics, and community identity.
- 6-P.2** Designate and develop the Emerald Necklace around the city, consisting of open spaces and conserved lands, that showcase and link unique resources both within and surrounding the Planning Area and serve as a distinct boundary for urban development within Redlands.
- 6-P.3** Seek to link the various elements of the Emerald Necklace through a system of open spaces, waterways, parks, and trails.
- 6-P.4** Preserve and enhance open space and agricultural land to define the Montone and Crafton areas as distinct from Redlands.
- 6-P.5** Encourage the preservation of natural habitat areas as open space.
- 6-P.6** Promote access to and views of conservation areas in a manner consistent with good land resource stewardship.

Actions

- 6-A.1** Preserve as open space those areas that contain unique habitats, natural resources, and visual amenities such

as citrus groves, hillsides, canyons, and waterways. These areas provide natural contrast with the urban cityscape.

- 6-A.2** Identify gaps in the Emerald Necklace and work with San Bernardino County and neighboring cities, conservation organizations, and willing landowners to prioritize land acquisition or other resource preservation strategies in those areas.
- 6-A.3** Identify portions of the Emerald Necklace that are not in public ownership and work with conservation organizations and landowners to ensure that the land is dedicated or otherwise conserved.
- 6-A.4** Develop standards for planning, design, management, and maintenance of trails and pathways within parks, preserves, open space, and rights-of-way.

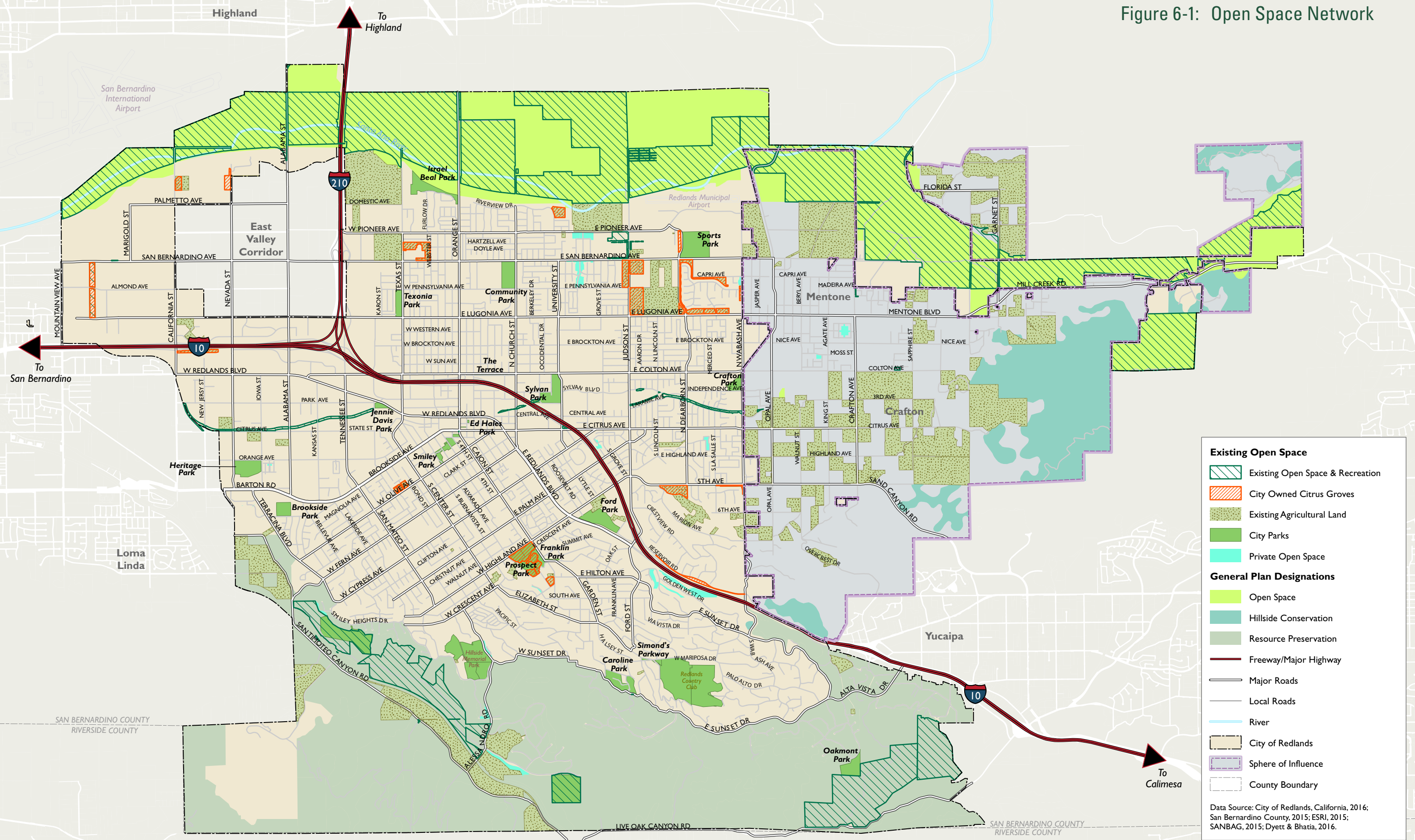
- 6-A.5** Develop a long term plan for the maintenance of open space areas held by the City which may include non-profits, public-private partnerships, and volunteer organizations.
- 6-A.6** Designate and map open space, recreation areas, and trails contained in the Emerald Necklace.
- 6-A.7** Work with San Bernardino County, neighboring cities, conservation organizations, and landowners to maintain and enhance the trails, roadways, and lands within the Emerald Necklace, and to ensure that sensitive resources in these areas are not disturbed or degraded.
- 6-A.8** Provide sufficient resources for the maintenance of trails and conservation areas through both volunteer and City mechanisms.

- 6-A.9** Develop and implement a wayfinding program along the Emerald Necklace to identify sites of interest and provide directions along trails and roadways. Ensure that any signs are consistently designed and visually compatible with the surroundings.
- 6-A.10** Maintain and enhance Redlands' network of urban forest and street trees.



Photo Credit: Jo Lessard

Figure 6-1: Open Space Network



Existing Open Space

- Existing Open Space & Recreation
- City Owned Citrus Groves
- Existing Agricultural Land
- City Parks
- Private Open Space

General Plan Designations

- Open Space
- Hillside Conservation
- Resource Preservation

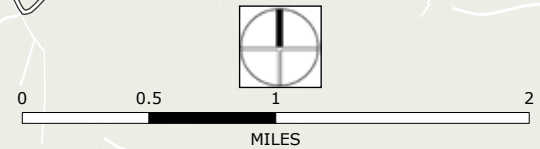
Infrastructure

- Freeway/Major Highway
- Major Roads
- Local Roads
- River

Administrative

- City of Redlands
- Sphere of Influence
- County Boundary

Data Source: City of Redlands, California, 2016; San Bernardino County, 2015; ESRI, 2015; SANBAG, 2015; Dyett & Bhatia, 2016.



6.2 BIOLOGICAL RESOURCES

Natural Vegetation

Although most of the Planning Area is developed or is in agricultural use, natural vegetation is present at the northern edge of the city along the Santa Ana Wash, as well in the eastern and southern portions in the hills and the canyons. Vegetation types are shown in Figure 6-2.

Annual Grassland

Annual grassland is the predominant land cover in portions of the Planning Area not already developed or in agricultural use. Dominant species in annual grasslands include cheat grass (*Bromus tectorum*), soft chess (*Bromus hordeaceus*), common ripgut grass (*Bromus diandrus*), foxtail chess (*Bromus madritensis*), and fiddleneck (*Amsinckia menziesii*). This vegetation community provides habitat for a variety of generally non-sensitive plant and wildlife species and covers approximately 4,082 acres of the Planning Area.

Chaparral

Chaparral is a relatively dense and tall shrubland of hillsides. It occurs interspersed with upland Riversidean sage scrub and grassland in the eastern and southern portions of the Planning Area. Shrub species typical of chaparral in these areas include bush mallow (*Malacothamnus fremontii*), hoary-leaf ceanothus (*Ceanothus crassifolius*), spiny redberry (*Rhamnus crocea*), chamise (*Adenostoma fasciculatum*), toyon (*Heteromeles arbutifolia*), and scrub oak (*Quercus* spp.). Chaparral comprises

approximately 2,050 acres in the Planning Area. This vegetation community provides habitat for a variety of generally non-sensitive plant and wildlife species.

Oak Woodland

Small areas of oak woodland occur in the eastern and southern portions of the Planning Area, where it consists of coast live oak (*Quercus agrifolia*) trees with an understory of annual grasses and forbs. Oak woodland is considered to be a sensitive vegetation community. Approximately 94 acres are present in the Planning Area.

Riparian Forest, Woodland, and Scrub

Watercourses in the Planning Area support communities of trees and shrubs adapted to streamside environments. These communities are typically dominated by mule fat (*Baccharis salicifolia*) or one or more species of willows (*Salix* sp.) or a by combination of these and other riparian trees and shrubs, such as Fremont cottonwood (*Populus fremontii*), coast live oak, canyon live oak (*Quercus chrysolepis*), western sycamore (*Platanus racemosa*), and blue elderberry (*Sambucus nigra* ssp. *caerulea*). Smaller species such as tree tobacco (*Nicotiana glauca*), speedwell (*Veronica* sp.), knotweed (*Polygonum* sp.), cocklebur (*Xanthium strumarium*), scalebroom (*Lepidospartum squamatum*), and nettle-leaved goosefoot (*Chenopodium murale*) are frequently present in openings. These riparian communities are particularly prevalent along San Timoteo Creek, Yucaipa Creek, and the Santa Ana River. There are approximately 147 acres of sensitive woody riparian communities in the Planning Area.

Riversidean Alluvial Fan Sage Scrub

Riversidean Alluvial Fan Sage Scrub is the dominant natural community in rocky and gravelly soils along the Santa Ana River Wash and Mill Creek north of Redlands. Dominant shrub species in this community

include scalebroom, California juniper (*Juniperus californica*), chaparral yucca (*Hesperoyucca whipplei*), California buckwheat (*Eriogonum fasciculatum*), and large shrubs typical of chaparral. Understory vegetation is often sparse and consists primarily of native forbs and non-native grasses. This vegetation community provides habitat for several rare species and is itself considered sensitive. This community covers approximately 3,109 acres in the Planning Area.

Upland Riversidean Sage Scrub

Upland Riversidean sage scrub is a relatively open shrubland dominated by low, drought-tolerant species such as California buckwheat, brittlebush (*Encelia farinosa*), and California sagebrush (*Artemisia californica*). Other species in this community include black sage (*Salvia mellifera*), blue elderberry, and California aster (*Lessingia filaginifolia*). This community is highly interspersed with annual grasslands and includes sparse patches of chaparral. It is located predominately in the southern and eastern hills of the Planning Area and consists of approximately 1,672 acres. Upland Riversidean sage scrub is considered to be a sensitive plant community when occupied by the California gnatcatcher (*Polioptila californica*).



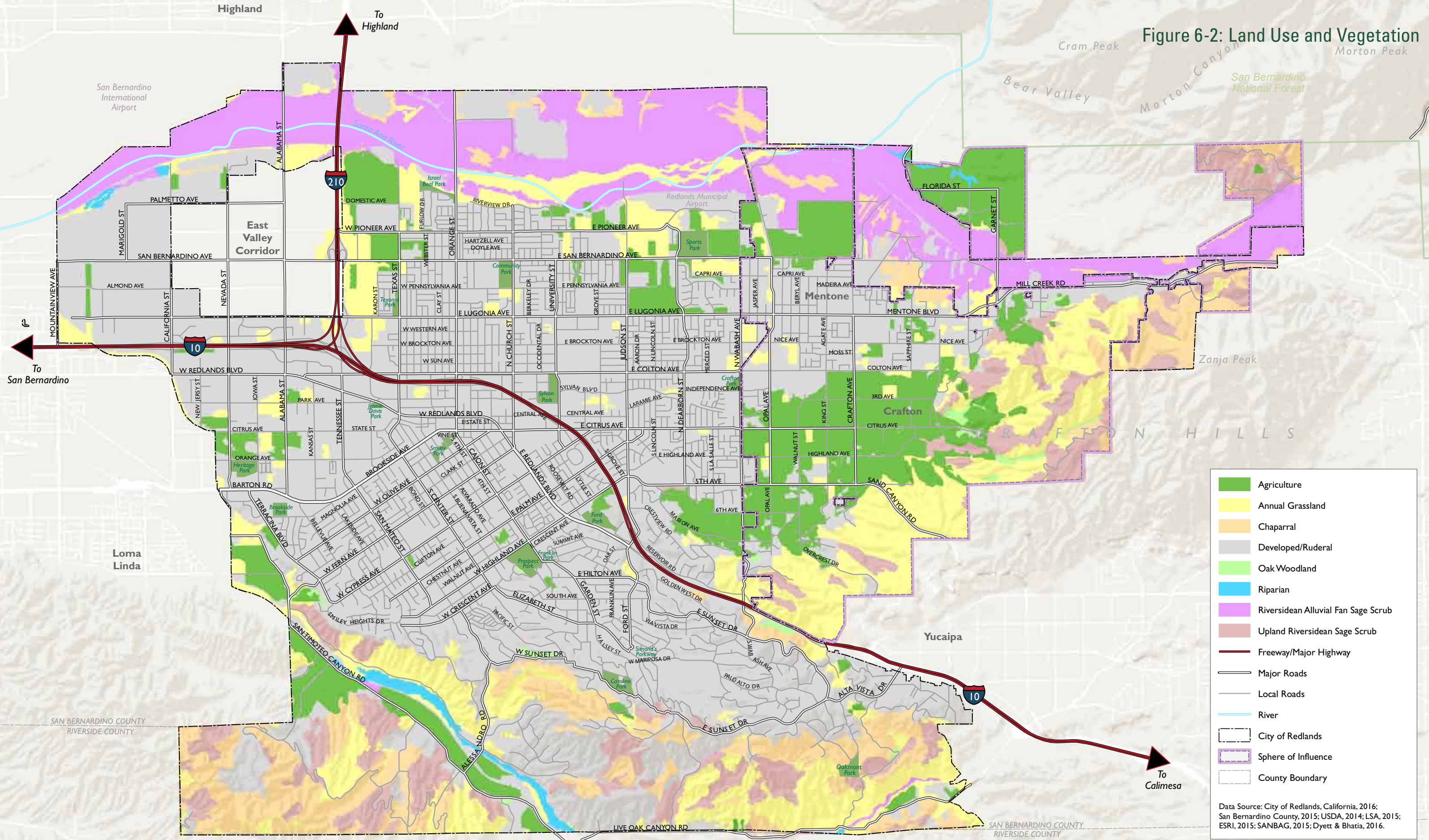
Photo Credits: Joe Castino

Redlands' natural forest habitats are home to a myriad of birds.



Photo Credit: Serena Plum

Figure 6-2: Land Use and Vegetation



- Agriculture
 - Annual Grassland
 - Chaparral
 - Developed/Ruderal
 - Oak Woodland
 - Riparian
 - Riversidean Alluvial Fan Sage Scrub
 - Upland Riversidean Sage Scrub
 - Freeway/Major Highway
 - Major Roads
 - Local Roads
 - River
 - City of Redlands
 - Sphere of Influence
 - County Boundary
- Data Source: City of Redlands, California, 2016; San Bernardino County, 2015; USDA, 2014; LSA, 2015; ESRI, 2015; SANBAG, 2015; Dyett & Bhatia, 2016.

Biological Resources

Critical Habitat

The U.S. Fish and Wildlife Service (USFWS) identifies a critical habitat as a specific geographical area that is essential to the conservation of a threatened or endangered species and that may require special management considerations or protection. Critical habitat for three federally listed endangered species including the Santa Ana sucker, San Bernardino kangaroo rat, and the southwestern willow flycatcher have been designated within the Planning Area.

Special-Status Natural Communities

Although they are not legally protected in the same way as are individual threatened and endangered species, certain natural communities are also considered to be of special status due to their limited occurrence or vulnerability. Within the Planning Area, these include oak woodland, Riversidean alluvial fan sage scrub, and riparian forest, woodland, and scrub communities. These habitats are of particular importance as habitat for the southwestern willow flycatcher, least Bell's vireo (*Vireo bellii pusillus*), Santa Ana River woollystar (*Eriastrum densifolium* ssp. *sanctorum*), slender-horned spineflower (*Dodecahema leptoceras*), San Bernardino kangaroo rat, and California gnatcatcher.

Wildlife Movement Corridors

Wildlife movement includes seasonal migration along corridors, as well as daily movements for foraging. The Santa Ana River, Mill Creek, and San Timoteo Creek and hills are particularly important movement corridors located along waterways. The Crafton Hills provide for movement between the Santa Ana River-Mill Creek-San Bernardino Mountains habitats to the north and the Live Oak-San Timoteo canyons-Badlands area to the south.

Special-Status Species

Special status species are those that are listed as rare, threatened, or endangered and afforded varying degrees of protection through the applicable requirements of the Federal Endangered Species Act (FESA), the California Native Plant Protection Act, and the California Endangered Species Act (CESA). These, as well as other sensitive species, require consideration in reviews of development projects under the California Environmental Quality Act (CEQA) and review of public works projects that have federal involvement of funding under the National Environmental Policy Act (NEPA).

Nineteen species that are State or federally listed as rare, threatened, or endangered species were identified as potentially present within the Planning Area. Eight of these species are either known to be present within the Planning Area or have a moderate to high probability of occurring due to the presence of suitable habitat.

- Nevin's barberry (*Berberis nevinii*). Known from hills southwest of San Timoteo Creek. May also occur in hills in other areas or along the Santa Ana River or Mill Creek.
- Slender-horned spineflower (*Dodecahema leptoceras*). Known from areas of Riversidean alluvial fan sage scrub along the Santa Ana River. May also occur along Mill Creek.
- Santa Ana River woolly star (*Eriastrum densifolium*). Known from areas of Riversidean alluvial fan sage scrub along the Santa Ana River. May also occur along Mill Creek.
- Southwestern willow flycatcher (*Empidonax trailii*). May nest in riparian forest in San Timoteo Creek and along other major watercourses.

- California gnatcatcher (*Poliophtila californica*). Known from along the Santa Ana River and may also be present in Riversidean alluvial fan sage scrub and upland Riversidean sage scrub in other areas.
- Least Bell's vireo (*Vireo bellii*). Known from riparian habitat along San Timoteo Creek and may also occur in other riparian areas.
- San Bernardino kangaroo rat (*Dipodomys merriami parvus*). Known from areas of scrub and grassland along the Santa Ana River and Mill Creek. May also occur in San Timoteo Canyon.
- Stephens' kangaroo rat (*Dipodomys stephensi*). Potentially suitable habitat occurs in grassland in the southern and eastern portions of the Planning Area.

Another species, Arroyo toad (*Bufo californicus*), has a low probability of occurring along San Timoteo Creek or perhaps other drainages in the Planning Area.

Ten other species that are listed as rare, threatened, or endangered and reported from the general vicinity of Redlands are not expected to occur in the Planning Area. These include marsh sandwort (*Arenaria paludicola*), salt marsh bird's beak (*Chloropyron maritimum* spp. *maritimum*), Gambel's watercress (*Nasturtium gambelli*), Parish's checkerbloom (*Sidalcea hickmanii* ssp. *parishii*), Delhi sands flower-loving fly (*Rhaphiomidas terminatus abdominalis*), Santa Ana sucker, Sierra Madre yellow-legged frog (*Rana muscosa*), Swainson's hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), and lesser long-noted bat (*Leptonycteris yerbabuena*). Even though Santa Ana sucker is not expected to occur in the Planning Area, a portion of the Planning Area along the Santa Ana River is designated as critical habitat for this species because it provides water and sediment transport important to downstream populations.

An additional 46 non-listed sensitive species were identified as potentially present in the Planning Area. Of these, the following 28 species have a moderate to high potential for occurrence due to presence of suitable habitat. Although these species are not listed as threatened or endangered, they are of limited distribution and ongoing development in the region is further reducing their ranges and numbers.

Table 6-1 summarizes the listing status, habitat requirements, and probabilities of occurrence of these species.

TABLE 6-1: SPECIAL STATUS SPECIES POTENTIALLY OCCURRING IN THE PLANNING AREA OR VICINITY

Species	Status	Habitat and Distribution	Activity Period	Probability of Occurrence in the Planning Area
Plants				
<i>Berberis nevinii</i> Nevin's barberry	US: FE CA: SE/1B	Gravelly wash margins in alluvial scrub or coarse soils and rocky slopes in chaparral at 275 to 825 meters (900 to 2,700 feet) elevation. Known occurrences at higher elevations are planted (not natural). Known only from Los Angeles, San Bernardino, Riverside, and San Diego Counties, California.	Blooms March through June (evergreen shrub, survey year-round)	Present. Known from hills southwest of San Timoteo Creek. May also occur in hills in other areas or along the Santa Ana River or Mill Creek.
<i>Chorizanthe parryi var. parryi</i> Parry's spineflower	US: – CA: 1B	Sandy or rocky soils in chaparral, coastal scrub, or woodlands at 40 to 1,705 meters (100 to 5,600 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties.	Blooms April through June (annual herb)	Present. Known from the northern and eastern portions of the Planning Area.
<i>Dodecahema leptoceras</i> Slender-horned spineflower	US: FE CA: SE/1B	Sandy cobbly riverbed alluvium in alluvial fan sage scrub (usually late seral stage), on floodplain terraces and benches that receive infrequent over bank deposits from generally large washes or rivers, where it is most often found in shallow silty depressions. Occurs at 200 to 760 meters (600 to 2,500 feet) elevation. Known only from Los Angeles, Riverside, and San Bernardino Counties, California.	Blooms April through June (annual herb)	Present. Known from areas of Riversidean alluvial fan sage scrub along the Santa Ana River. May also occur along Mill Creek.
<i>Eriastrum densifolium ssp. Sanctorum</i> Santa Ana River woollystar	US: FE CA: SE/1B	Riversidean alluvial fan sage scrub and chaparral in sandy or gravelly soils of floodplains and terraced fluvial deposits of the Santa Ana River and larger tributaries (Lytle and Cajon Creeks, lower portions of City and Mill Creeks) at 90 to 625 meters (300 to 2,100 feet) elevation in San Bernardino and Riverside Counties.	Blooms May through September	Present. Known from areas of Riversidean alluvial fan sage scrub along the Santa Ana River. May also occur along Mill Creek.
<i>Chorizanthe xanti var. leucotheca</i> White-bracted spineflower	US: – CA: 1B	Sandy to gravelly places in Mojave desert scrub, pinyon and juniper woodland, or coastal scrub at 300 to 1,200 meters (980 to 3,900 feet) elevation. Reported from Los Angeles, Riverside, and San Bernardino Counties.	Blooms April through June(annual herb)	High. Known from along Mill Creek just outside the Planning Area.
<i>Centromadia pungens ssp. Laevis</i> Smooth tarplant	US: – CA: 1B	Generally alkaline areas in chenopod scrub, meadows, playas, riparian woodland, valley and foothill grassland below 480 meters (1,600 feet) elevation. Known from Riverside and San Bernardino Counties, extirpated from San Diego County.	Blooms April through November (annual herb)	Moderate. May occur in areas of alkaline soil.
<i>Imperata brevifolia</i> California satintail	US: - CA: 2B	Desert seeps, springs, moist canyons, canals, alkaline sinks, and similar wet areas below 500 meters (1,600 feet) elevation. Widespread in California and the western U. S. Also occurs in Mexico.	Blooms September through May (perennial grass)	Moderate. Known from the vicinity. May occur in San Timoteo Canyon or other moist sites.
<i>Monardella macrantha ssp. Hallii</i> Hall's monardella	US: – CA: 1B	Dry slopes and ridges in openings in chaparral, woodland, and forest at 695 to 2,195 meters (2,280 to 7,200 feet) elevation. Known only from Los Angeles, San Diego, Orange, Riverside, and San Bernardino Counties, California.	Blooms June through August (sometimes to October) (perennial herb)	Moderate. Known from just outside the Planning Area along Mill Creek. May also occur in hilly areas.
<i>Horkelia cuneata ssp. Puberula</i> Mesa horkelia	US: – CA: 1B	Sandy or gravelly soils in chaparral, or rarely in cismontane woodland or coastal scrub at 70 to 825 meters (200 to 2,700 feet) elevation. Known only from San Luis Obispo, Santa Barbara, Ventura, Los Angeles, Orange, and San Bernardino Counties, California. Believed extirpated from Riverside and San Diego Counties.	Blooms February through July (sometimes to September) (perennial herb)	Low. Planning Area is outside known range of species. Little or no suitable habitat.
<i>Sidalcea neomexicana</i> Salt Spring checkerbloom	US: – CA: 2B	Alkaline springs and brackish marshes below 1,530 meters (5,000 feet) elevation. In California, known only from Kern, Orange, Riverside, San Bernardino, San Diego, and Ventura Counties. Believed extirpated from Los Angeles County. Also known from Arizona, New Mexico, Nevada, Utah, and Mexico.	Blooms March through June(perennial herb)	Low. Only historical records (over 100 years old) from Redlands or vicinity.
<i>Sphenopholis obtusata</i> Prairie wedge grass	US: – CA: 2B	Wet meadows, stream banks, and ponds at 300 to 2,000 meters (1,000 to 6,600 feet) elevation. Widely distributed. In Southern California, known only from San Bernardino, Riverside (Santa Ana River), and perhaps San Diego Counties.	Blooms April through July(perennial herb)	Low. Historical records from vicinity, but none from the Planning Area.
<i>Streptanthus campestris</i> Southern jewel-flower	US: – CA: 1B	Open rocky areas in chaparral, lower montane coniferous forest and pinyon-juniper woodland at 600 to 2,400 meters (2,000 to 7,800 feet) elevation. In California, known from Riverside, San Bernardino, and San Diego Counties.	Blooms May through July (perennial herb)	Low. This is primarily a mountain species, but there is a historical record (1955) from Mill Creek Canyon a few miles east of Redlands.

TABLE 6-1: SPECIAL STATUS SPECIES POTENTIALLY OCCURRING IN THE PLANNING AREA OR VICINITY

Species	Status	Habitat and Distribution	Activity Period	Probability of Occurrence in the Planning Area
<i>Symphotrichum defoliatum</i> San Bernardino aster	US: – CA: 1B	Vernally wet sites (such as ditches, streams, and springs) in many plant communities below 2,040 meters (6,700 feet) elevation. In California, known from Ventura, Kern, San Bernardino, Los Angeles, Orange, Riverside, and San Diego Counties. May also occur in San Luis Obispo County.	Blooms July through November(perennial herb)	Low. There are historical records from the general vicinity, but none from the Planning Area.
Fish				
<i>Rhinichthys osculus ssp. 3</i> Santa Ana speckled dace	US: – CA: SSC	Found in the headwaters of the Santa Ana and San Gabriel River drainages. Found in riffles in small streams and shore areas with abundant gravel and rock.	Year-round	Present. Known from Mill Creek and the Santa Ana River.
<i>Gila orcuttii</i> Arroyo chub	US: – CA: SSC	Perennial streams or intermittent streams with permanent pools; slow water sections of streams with mud or sand substrates; spawning occurs in pools. Native to Los Angeles, San Gabriel, San Luis Rey, Santa Ana, and Santa Margarita River systems; introduced in Santa Ynez, Santa Maria, Cuyama, and Mojave River systems and smaller coastal streams.	Year-round	Low. Habitat in the Planning Area is unlikely to be suitable due to lack of perennial water in Santa Ana River and Mill Creek.
Amphibians				
<i>Spea hammondi</i> Western spadefoot	US: – CA: SSC	Grasslands and occasionally hardwood woodlands; largely terrestrial but requires rain pools or other ponded water persisting at least three weeks for breeding. Occurs in the Central Valley and adjacent foothills, the non-desert areas of southern California, and Baja California.	October through April (following onset of winter rains)	High. May occur in large road ruts and other temporarily ponded areas in undeveloped portions of the Planning Area.
<i>Anaxyrus (Bufo) californicus</i> Arroyo toad	US: FECA: SSC	Washes and arroyos with open water; sand or gravel beds; for breeding, pools with sparse overstory vegetation. Coastal and a few desert streams from Santa Barbara County to Baja California.	March through July	Low. Not reported from the Planning Area. Potential habitat along major watercourses (Santa Ana River, Mill Creek, San Timoteo Creek) is only marginally suitable, at best.
Reptiles				
<i>Aspidoscelis hyperythra</i> Orangethroat whiptail	US: – CA: SSC	Prefers washes and other sandy areas with patches of brush and rocks, in chaparral, coastal sage scrub, juniper woodland, and oak woodland from sea level to 915 meters (3,000 feet) elevation. Perennial plants required. Occurs in Riverside, Orange, San Diego Counties in southwest San Bernardino County, and in Baja California.	March through July with reduced activity August through October	Present. Occurs along the Santa Ana River, in the Crafton Hills, and around San Timoteo Canyon. May occur along washes and in scrub in other portions of the Planning Area as well.
<i>Anniella pulchra</i> California legless lizard	US: – CA: SSC	Inhabits sandy or loose loamy soils with high moisture content under sparse vegetation from central California to northern Baja California.	Nearly year round, at least in southern areas	High. Suitable habitat is present in undeveloped sites with loose soil.
<i>Crotalus ruber</i> Red diamond rattlesnake	US: – CA: SSC	Desert scrub, thornscrub, open chaparral and woodland; occasional in grassland and cultivated areas. Prefers rocky areas and dense vegetation. Morongo Valley in San Bernardino and Riverside Counties to the west and south into Mexico.	Mid-spring through mid-fall	High. Suitable habitat occurs in hills and rocky areas along the major watercourses.
<i>Phrynosoma blainvillii (coronatum)</i> Coast horned lizard	US: – CA: SSC	Primarily in sandy soil in open areas, especially washes and floodplains, in many plant communities. Requires open areas for sunning, bushes for cover, and patches of loose soil for burial. Occurs west of the deserts from northern Baja California north to Shasta County below 2,400 meters (8,000 feet) elevation.	April through July with reduced activity August through October	High. Suitable habitat is present along the Santa Ana River and in sandy areas in other portions of the Planning Area.
<i>Thamnophis hammondi</i> Two-striped garter snake	US: – CA: SSC	Highly aquatic. Only in or near permanent sources of water. Streams with rocky beds supporting willows or other riparian vegetation. From Monterey County to northwest Baja California.	Diurnal Year-round	Moderate. May occur along San Timoteo Creek and in other areas of permanent or near permanent water.
Birds				
<i>Icteria virens (nesting)</i> Yellow-breasted chat	US: – CA: SSC (breeding)	Riparian thickets of willow, brushy tangles near watercourses. Nests in riparian woodland throughout much of western North America. Winters in Central America.	April through September	Present. Known from riparian habitat along San Timoteo Creek. Suitable habitat exists in other areas of riparian forests and scrub.
<i>Lanius ludovicianus (nesting)</i> Loggerhead shrike	US: – CA: SSC (breeding)	Prefers open habitats with scattered small trees and with fences, utility lines, or other perches. Inhabits open country with short vegetation, pastures, old orchards, cemeteries, golf courses, riparian areas, and open woodlands. Occurs only rarely in heavily urbanized areas, but often found in open cropland. Found in open country in much of North America.	Year-round	Present. Known from San Timoteo canyon, and likely also occurs in other open habitats.

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Species	Status	Habitat and Distribution	Activity Period	Probability of Occurrence in the Planning Area
<i>Polioptila californica</i> California gnatcatcher	US: FTCA: SSC	Inhabits coastal sage scrub in low-lying foothills and valleys up to about 500 meters (1,640 feet) elevation in cismontane southwestern California and Baja California.	Year-round	Present. Known from along the Santa Ana River and may also be present in Riversidean alluvial fan sage scrub and upland Riversidean sage scrub in other areas.
<i>Setophagia petechia</i> (nesting) Yellow warbler	US: – CA: SSC (breeding)	Riparian woodland while nesting in the western U.S. and northwestern Baja California; more widespread in brushy areas and woodlands during migration. Occurs from western Mexico to northern South America in winter. Migrants are widespread and common.	Summer, winter, or Year-round, depending on locale	Present. Known from riparian habitat along San Timoteo Creek. Suitable habitat also occurs in other areas of riparian woodland, forest, and scrub.
<i>Vireo bellii pusillus</i> Least Bell's vireo	US: FECA: SE	Riparian forests and willow thickets. The most critical structural component of Least Bell's Vireo habitat in California is a dense shrub layer 2 to 10 feet (0.6–3.0 meter) above ground. Nests from central California to northern Baja California. Winters in southern Baja California.	April through September	Present. Known from riparian habitat along San Timoteo Creek and may also occur in other riparian areas.
<i>Athene cunicularia</i> (burrow sites) Burrowing owl	US: – CA: SSC (breeding)	Open country with low or sparse vegetation in much of North and South America. Usually occupies ground squirrel burrows in open, dry grasslands, agricultural and range lands, railroad rights-of-way, and margins of highways, golf courses, and airports.	Year-round	High. Potentially suitable habitat is present in open areas associated with agriculture and in grassland throughout the Planning Area.
<i>Elanus leucurus</i> (nesting) White-tailed kite	US: – CA: CFP	Typically nests in riparian trees such as oaks, willows, and cottonwoods at low elevations. Forages in open country. Found in South America and in southern areas and along the western coast of North America.	Year-round	High. Suitable habitat occurs along major watercourses with adjacent grassland or scrub.
<i>Aquila chrysaetos</i> (nesting & wintering) Golden eagle	US: – CA: CFP	Generally open country of the Temperate Zone worldwide. Nesting primarily in rugged mountainous country. Uncommon resident in Southern California.	Year-round diurnal	Moderate. May forage over the Santa Ana River and other large open areas. No nesting habitat is present.
<i>Asio otus</i> (nesting) Long-eared owl	US: – CA: SSC (breeding)	Scarce and local in forests and woodlands throughout much of the Northern Hemisphere. Rare resident in coastal southern California. Nests and roosts in dense willow-riparian woodland and oak woodland, but forages over wider areas. Breeds from valley foothill hardwood up to ponderosa pine habitat.	Nocturnal Year-round	Moderate. Potentially suitable habitat exists for this species in riparian woodlands and adjacent areas.
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	US: FECA: SE	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and possibly extreme northwestern Mexico. Winters in Central and South America. Below 6,000 feet elevation.	May through September	Moderate. May nest in riparian forest in San Timoteo Creek and along other major watercourses.
<i>Agelaius tricolor</i> (nesting colony) Tricolored blackbird	US: – CA: SSC (breeding)	Open country. Forages in grassland and cropland habitats. Nests in large groups near fresh water, preferably in emergent wetland with tall, dense cattails or tules, but also in thickets of willow, blackberry, wild rose, or tall herbs. Seeks cover for roosting in emergent wetland vegetation, especially cattails and tules, and also in trees and shrubs. Occurs in western Oregon, California, and northwestern Baja California.	Year-round	Low. Habitat may be marginally suitable for this species at marshy sites in agricultural areas or along watercourses.
Mammals				
<i>Chaetodipus fallax fallax</i> <i>Northwestern</i> San Diego pocket mouse	US: – CA: SSC	Found in sandy herbaceous areas, usually associated with rocks or coarse gravel in coastal scrub, chaparral, grasslands, and sagebrush, from Los Angeles County through southwestern San Bernardino, western Riverside, and San Diego Counties to northern Baja California.	Year-round	Present. Known from areas of scrub and grassland in the northern and eastern portions of the Planning Area.
<i>Dipodomys merriami parvus</i> San Bernardino kangaroo rat	US: FECA: SSC	Gravelly and sandy soils of alluvial fans, braided river channels, active channels and terraces; San Bernardino Valley (San Bernardino County) and San Jacinto Valley (Riverside County). In San Bernardino County, this species occurs primarily in the Santa Ana River and its tributaries north of Interstate 10, with small remnant populations in the Etiwanda alluvial fan, the northern portion of the Jurupa Mountains in the south Bloomington area, and in Reche Canyon.	Nocturnal, active year-round	Present. Known from areas of scrub and grassland along the Santa Ana River and Mill Creek. May also occur in San Timoteo Canyon.
<i>Neotoma lepida intermedia</i> San Diego desert woodrat	US: –CA: SSC	Found in desert scrub and coastal sage scrub habitat, especially in association with cactus patches. Builds stick nests around cacti, or on rocky crevices. Occurs along the Pacific slope from San Luis Obispo County to northwest Baja California.	Year-round, mainly nocturnal, occasionally crepuscular and diurnal	Present. Known from areas of scrub along the Santa Ana River. Suitable habitat also exists in other areas of scrub and chaparral.

TABLE 6-1: SPECIAL STATUS SPECIES POTENTIALLY OCCURRING IN THE PLANNING AREA OR VICINITY

Species	Status	Habitat and Distribution	Activity Period	Probability of Occurrence in the Planning Area
<i>Perognathus longimembris brevinasus</i> Los Angeles pocket mouse	US: – CA: SSC	Prefers sandy soil for burrowing, but has been found on gravel washes and stony soils. Found in coastal sage scrub in Los Angeles, Riverside, and San Bernardino Counties.	Nocturnal. Active late spring to early fall.	Present. Known from along the Santa Ana River. May also occur in other areas of scrub.
<i>Eumops perotis californicus</i> Western mastiff bat	US: – CA: SSC	Occurs in many open, semi-arid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grasslands, chaparral, etc.; roosts in crevices in vertical cliff faces, high buildings, and tunnels, and travels widely when foraging.	Year-round; nocturnal	High. Suitable foraging habitat exists in coastal sage scrub and grassland communities within the Planning Area. May roost in high buildings.
<i>Lasiurus xanthinus</i> Western yellow bat	US: – CA: SSC	Found mostly in desert and desert riparian areas of the southwest US, but also expanding its range with the increased usage of native and non-native ornamental palms in landscaping. Individuals typically roost amid dead fronds of palms in desert oases, but have also been documented roosting in cottonwood trees. Forage over many habitats.	Year-round; nocturnal	High. Palm trees suitable for roosting are scattered throughout Planning Area. Cottonwoods in San Timoteo Canyon and other areas may also provide suitable roosting habitat.
<i>Lepus californicus bennettii</i> San Diego black-tailed jackrabbit	US: – CA: SSC	Variety of habitats including herbaceous and desert scrub areas, early stages of open forest and chaparral. Most common in relatively open habitats. Restricted to the cismontane areas of Southern California, extending from the coast to the Santa Monica, San Gabriel, San Bernardino, and Santa Rosa Mountain ranges.	Year-round, diurnal and crepuscular activity	High. Suitable habitat occurs in scrub and grassland communities in the northern, eastern, and southern portions of the Planning Area.
<i>Antrozous pallidus</i> Pallid bat	US: – CA: SSC	Most common in open, dry habitats with rocky areas for roosting. Day roosts in caves, crevices, rocky outcrops, tree hollows or crevices, mines and occasionally buildings, culverts, and bridges. Night roosts may be more open sites, such as porches and open buildings. Grasslands, shrublands, woodlands, and forest in western North America.	Year-round; nocturnal	Moderate. Potentially suitable roosting habitat exists in rocky outcrops, buildings, and bridges. Potentially suitable foraging habitat exists in grasslands, rocky slopes, woodland, and riparian forest communities.
<i>Dipodomys stephensi</i> Stephens' kangaroo rat	US: FECA: ST	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50% and soils suitable for burrowing (neither sandy nor too hard). Not found in soils that are highly rocky or sandy, less than 20 inches deep, or heavily alkaline or clay, or in areas exceeding 25% slope. Occurs only in western Riverside County, northern San Diego County, and extreme southern San Bernardino County, below 915 meters (3,000 feet) elevation. Reaches its northwest limit in south Norco, southeast Riverside, and in the Reche Canyon area of Riverside and extreme southern San Bernardino Counties.	Year-round, nocturnal	Moderate. Potentially suitable habitat occurs in grassland in the southern and eastern portions of the Planning Area.
<i>Onychomys torridus ramona</i> Southern grasshopper mouse	US: – CA: SSC	Believed to inhabit sandy or gravelly valley floor habitats with friable soils in open and semi-open scrub, including coastal sage scrub, mixed chaparral, low sagebrush, riparian scrub, and annual grassland with scattered shrubs, preferring low to moderate shrub cover. Known from arid portions of southwestern California and northwestern Baja California.	Nocturnal, active year-round	Moderate. Potential habitat occurs in areas of scrub and chaparral.
<i>Taxidea taxus</i> American badger	US: – CA: SSC	Primary habitat requirements seem to be sufficient food and friable soils in relatively open uncultivated ground in grasslands, woodlands, and desert. Widely distributed in North America.	Year-round	Moderate. Potentially suitable habitat exists along the Santa Ana River and Mill Creek and in hilly portions of the Planning Area.
<i>Nyctinomops femorosaccus</i> Pocketed free-tailed bat	US: – CA: SSC	Usually associated with cliffs, rock outcrops, or slopes. May roost in buildings (including roof tiles) or caves. Rare in California, where it is found in Riverside, San Diego, Imperial and possibly Los Angeles Counties. More common in Mexico.	Year-round; nocturnal	Low. Marginally suitable habitat may occur in hilly areas in the eastern and southern portions of the Planning Area.

US: Federal Classifications

- FE: Listed as Endangered
- FT: Listed as Threatened
- CA: State Classifications
- SE: State-listed as Endangered
- ST: State-listed as Threatened
- SR: State-listed as Rare
- CFP: California Full Protected. Refers to animals protected from take under Fish and Game Code sections 3511, 4700, 5050, and 5515.
- SA: Special Animal. Refers to any other animal monitored by the Natural Diversity Data Base, regardless of its legal or protection status.
- 1A: California Rare Plant Rank 1A – presumed extinct in California
- 1B: California Rare Plant Rank 1B – rare, threatened or endangered in California and elsewhere.
- 2B: California Rare Plant Rank 2 – rare, threatened or endangered in California, but more common elsewhere.

Source: LSA Associates, 2015.

POLICIES

Principles

- 6-P.7** Protect environmentally sensitive lands, wildlife habitats, and rare, threatened, or endangered plant and animal communities.
- 6-P.8** Minimize disruption of wildlife and valued habitat throughout the Planning Area and emphasize that open space is for more than just human use, but also serves as habitat for biological resources.
- 6-P.9** Preserve, protect, and enhance wildlife corridors, including natural watercourses, connecting the San Bernardino National Forest, Santa Ana River Wash, Crafton Hills, San Timoteo and Live Oak Canyons, the Badlands, and other open space areas.
- 6-P.10** Landscape public areas using native vegetation where practical.

Actions

- 6-A.11** Require a biological assessment of any proposed project site within the Planning Area where species that are State

or federally listed as rare, threatened, or endangered are identified as potentially present.

- 6-A.12** Require that proposed projects adjacent to, surrounding, or containing wetlands, riparian corridors, or wildlife corridors be subject to a site-specific analysis that will determine the appropriate size and configuration of a buffer zone.
- 6-A.13** Utilize conservation easements and preserves as means to conserve natural habitats.
- 6-A.14** Construct freeway and arterial street undercrossings or overpasses where necessary to establish and preserve identified wildlife corridors.
- 6-A.15** Enhance the Mill Creek Zanja and Morey Arroyo and tributary drainages as riparian corridors, where feasible, to provide habitat as well as recreational and aesthetic value consistent with an overall master plan for habitat preservation.
- 6-A.16** Work with the Crafton Hills Open Space Conservancy to preserve, enhance, and maintain the Crafton Hills as an ecosystem.

- 6-A.17** Coordinate open space and habitat preservation in the Crafton Hills with the City of Yucaipa.
- 6-A.18** Coordinate open space and habitat preservation in San Timoteo and Live Oak canyons with Riverside County.
- 6-A.19** Continue participation in regional planning efforts to protect habitat and environmentally sensitive species, including efforts by the City of Yucaipa on habitat preservation along Yucaipa Creek and in Live Oak Canyon throughout its length.
- 6-A.20** Work with State and County agencies in developing recovery and restoration plans after natural or manmade disasters to restore natural landscapes, habitats, and functioning ecosystems. As part of the recovery and restoration plans, include evaluation processes and implementation actions. Where appropriate, incorporate the use of native species.
- 6-A.21** Ensure that future activities in the Santa Ana River Wash are consistent with the habitat conservation policies of the Upper Santa Ana River Land Management Habitat Conservation Plan (Wash Plan).



Open space on the periphery of Redlands, including the Santa Ana River Wash, are valuable natural environs for humans and animals alike, and contribute to the unique scenic character of Redlands.

6.3 AGRICULTURE AND OPEN SPACE FOR RESOURCE PRODUCTION

Open space for agriculture and for construction aggregate mining corresponds to the open space for managed production of resources under State law.

Agriculture

Citrus farming was Redlands' original economic base. While most agricultural lands in Redlands have been lost due to urban development pressures, citrus farming remains an integral part of the city's identity. Agricultural land makes up 948 acres (4 percent) of land in the city; 1,269 acres (19 percent) of land in the Sphere of Influence, and 2,217 acres (7 percent) of land in the entire Planning Area, as shown on Figure 6-3. Agricultural areas are generally limited to the periphery of the Planning Area, mainly to the north along Santa Ana Wash, east in Mentone and Crafton, and south in San Timoteo Canyon. Agricultural production is devoted largely to citrus groves. Other forms of agriculture include other orchard crops, row crops, livestock, dairies, and Christmas tree farms. The city contains 1,137 acres of land classified by the California Farmland Mapping and Monitoring Program as Prime, of Statewide or Local Importance, or Unique, with another 1,866 acres in the Redlands Sphere of Influence.

Agricultural Preservation

Much of the city's agricultural land is located in areas designated as Agricultural Preserve, a set of boundaries originally established in 1970 within which landowners may enter 10-year Williamson Act contracts to maintain open use in exchange for taxation based on agricultural use rather than market value. Williamson Act contracts renew automatically each year unless the owner of public entity (City or County) serves notice of nonrenewal, allowing the land to become available for development 10 years hence. As of 2017, there are 622 acres of farmland contracted under the Williamson Act in the Planning Area.

Citrus Production

Citrus groves in the Planning Area outside of city limits include those in Mentone near the Redlands Airport, interspersed among development in the Mentone area, at the end of Mentone Boulevard, and throughout the Crafton area. Much of Crafton is devoted to citrus groves or other agricultural uses. San Bernardino County identifies the Crafton Hills Groves as a major open space area. The County notes that the area is of value primarily as an agricultural district, although it also has scenic value as an example of the once widespread citrus operations in the San Bernardino Valley.

The City of Redlands has a Citrus Preservation division in its Quality of Life Department, and operates citrus groves as an enterprise. The City owns 16 citrus groves throughout the city totaling 152 acres. The city's citrus heritage is discussed in Chapter 2. The groves are shown on Figure 6-3.

Agricultural Designations

The General Plan Land Use Diagram (Figure 4-1) includes several designations to permit and to promote continued agriculture use. These designations include Agriculture on land within the city, and the Resource Preservation designation that

applies to land south of Sunset Drive, which permits continued agricultural use in San Timoteo Canyon. The Agriculture designation along Santa Ana Wash contains several citrus groves in Mentone. The Rural Living designation covers much of Crafton, which contains a large portion of orange groves in the Planning Area; this designation requires a minimum lot size of five acres (with larger lots on slopes greater than 15 percent). Figure 6-3 shows these designations together with existing agriculture uses.

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 (SMGB).

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. Figure 6-4 shows mineral land classifications and designated aggregate resource sectors as identified by the California Geological Survey (CGS). The mineral land classifications show areas inventoried by CGS in terms of mineral resource potential. The aggregate resource sectors show areas designated by SMGB as lands containing mineral resources of regional or statewide economic significance that are needed to meet the demands of the future. In some cases, previously designated areas have been terminated due to the development of land uses incompatible with mining; these are also shown on Figure 6-4. Classifications and designations may be updated by CGS and SMGB over time.

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.

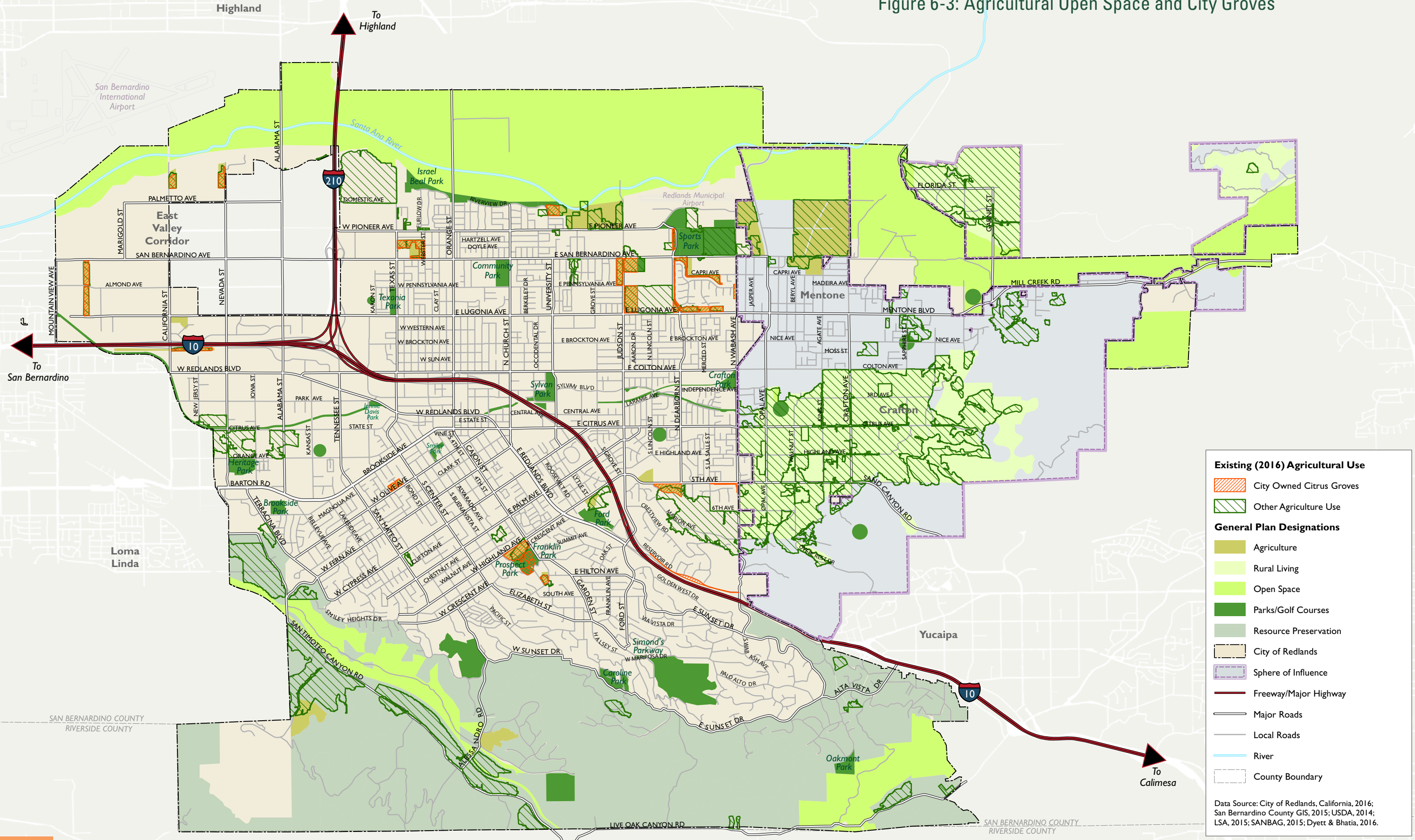
In 1990 Redlands annexed the Sunwest Materials (formerly C.L. Pharris Sand and Gravel Company's Orange Street Aggregates) processing plant built two years earlier under permits issued by San Bernardino County. The annexed area also included the Old Webster Quarry which is being mined by Robertson Ready 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; 10.45 billion tons are potentially available as resources within the Santa Ana Wash area.

The Wash area is covered by the Upper Santa Ana Wash Land Management and Habitat Conservation Plan (Wash Plan), which provides for the coordination and accommodation of existing and anticipated future activities in the wash area. The Wash Plan proposes land use designations for the entire Wash area in Redlands, including land for habitat conservation, aggregate mining, flood control, and water conservation.



Historical citrus advertisements underscore the importance of the citrus industry to Redlands' identity.

Figure 6-3: Agricultural Open Space and City Groves



Data Source: City of Redlands, California, 2016; San Bernardino County GIS, 2015; USDA, 2014; LSA, 2015; SANBAG, 2015; Dyett & Bhatia, 2016.

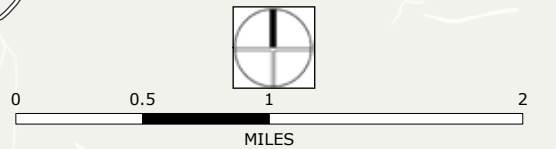
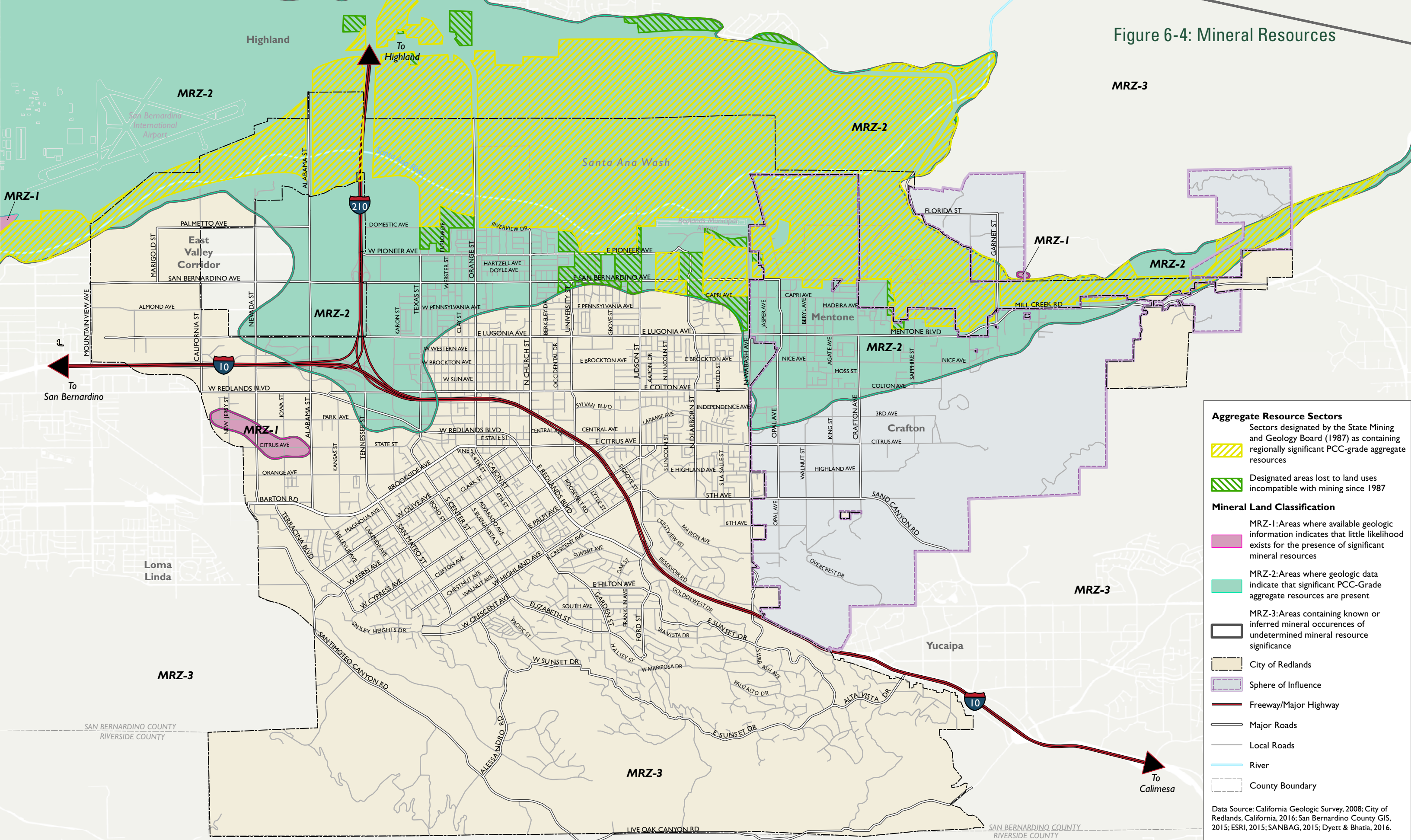


Figure 6-4: Mineral Resources



Aggregate Resource Sectors
 Sectors designated by the State Mining and Geology Board (1987) as containing regionally significant PCC-grade aggregate resources

Designated areas lost to land uses incompatible with mining since 1987

Mineral Land Classification

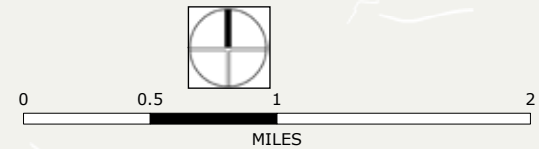
MRZ-1: Areas where available geologic information indicates that little likelihood exists for the presence of significant mineral resources

MRZ-2: Areas where geologic data indicate that significant PCC-Grade aggregate resources are present

MRZ-3: Areas containing known or inferred mineral occurrences of undetermined mineral resource significance

City of Redlands
 Sphere of Influence
 Freeway/Major Highway
 Major Roads
 Local Roads
 River
 County Boundary

Data Source: California Geologic Survey, 2008; City of Redlands, California, 2016; San Bernardino County GIS, 2015; ESRI, 2015; SANBAG, 2015; Dyett & Bhatia, 2016.



POLICIES

Principles

Agriculture

- 6-P.11** Retain the maximum feasible amount of agricultural land for its contributions to the local economy, lifestyle, air quality, habitat value and sense of Redlands' heritage.
- 6-P.12** Support the viability of agriculture through efforts to promote locally-grown produce and livestock as part of Redlands lifestyle and economy.
- 6-P.13** Preserve the identity of Crafton and San Timoteo /Live Oak canyons as farming neighborhoods.
- 6-P.14** Provide for the continued operation of existing livestock/dairy farms in areas of the San Timoteo and Live Oak canyons and Crafton designated as Resource Preservation, Rural Living, and Very Low Density Residential on the General Plan Land Use map.



- 6-P.15** Support appropriate commercial activities (i.e horse stables, agri-tourism) in rural areas.

Construction Aggregates

- 6-P.16** Ensure that future mining activity in the Santa Ana River Wash area is consistent with the Upper Santa Ana River Land Management Habitat Conservation Plan (Wash Plan).
- 6-P.17** Ensure that adequate aggregate reserves for local and regional needs are available in accordance with the Wash Plan.
- 6-P.18** Reserve designated Mineral Resource Zone (MRZ) areas outside the Santa Ana River Wash for agricultural or open space uses.

Actions

Agriculture

- 6-A.22** Employ zoning for agricultural and rural living areas to maintain citrus and other croplands in production where designated on the General Plan Land Use map.
- 6-A.23** Permit transfer of development rights (TDR) between agreeable owners to preserve agricultural land and citrus groves. Develop an agricultural land mitigation program to conserve agricultural land through agricultural conservation easements at a ratio of 1:1 or greater.

The City may also take advantage of funding opportunities in order to establish such a program.

- 6-A.24** Utilize local land trusts to make the most efficient use of funds available for agricultural preservation.
- 6-A.25** Utilize State and non-profit funds for agricultural conservation easements with willing participants.
- 6-A.26** Ensure that new development adjacent to an agricultural use is compatible with the continuation of the use by requiring appropriate design criteria, such as site layout, landscaping, and buffer areas.
- 6-A.27** Promote "agri-tourism", farm-to-table promotions, roadside stands, and farmers markets to enhance the economic viability of farming in Redlands.

- 6-A.28** Permit and encourage community gardens in City parks and open spaces, and in the open space areas of new developments.
- 6-A.29** Encourage retention or establishment of horse stables and riding academies in the Highland-Canyons planning subarea to meet the needs of the Planning Area's equestrians.

Construction Aggregates

- 6-A.30** Designate mineral resource (mining) areas as identified in the Wash Plan.
- 6-A.31** Apply zoning regulations in designated Regionally Significant Construction Aggregate Resource Areas allowing aggregate extraction as a conditional use and prohibiting land uses incompatible with mining operations.
- 6-A.32** Deny approval of surface mining permits at locations where unmitigated adverse impacts would be significantly greater than at alternative locations within the San Bernardino Production-Consumption Region.
- 6-A.33** 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.

6.4 WATER QUALITY

Regulatory Context

Clean Water Act

The 1972 Clean Water Act (CWA) is the primary federal law regulating water quality in the United States. Its objective is to reduce or eliminate water pollution in the nation's rivers, streams, lakes, and coastal waters. At the federal level, the CWA is administered by the EPA. In California, the CWA is administered and enforced by the State Water Resources Council board (SWRCB) and nine regional water quality control boards.

National Pollutant Discharge Elimination System Program

The federal Water Pollution Control Act established the National Pollutant Discharge Elimination System (NPDES) permit program to control discharges of pollutants from point sources (Section 402). The NPDES permit program is the primary federal program that regulates point source and nonpoint-source discharges to waters of the United States. The City's NPDES program has been in effect since 2004 and consists of business and construction inspections, program compliance reporting, record keeping, educational outreach, studies and reports, and storm water monitoring activities.

Water Conservation Act of 2009

California legislation enacted in 2009 as SB 7 of the 7th Special Legislative Session (SB X7-7) instituted a new set of urban water conservation requirements known as "20 Percent By 2020." These requirements stipulate that urban water agencies reduce per-capita water use within their service areas by 20 percent relative to their use over the previous 10 to 15 years.

Upper Santa Ana River Watershed Integrated Regional Water Management (IRWM) Plan

The most current IRWM was developed in 2015, and serves as an update to the previous IRWM developed in 2007. The City was involved in developing and updating the IRWM. Goals of the IRWM include improving water supply reliability, balancing flood management and increasing stormwater recharge, improving water quality, and improving habitat and open space.

San Bernardino Valley Regional Urban Water Management Plan (RUWMP)

The 2015 RUWMP is a document that provides a summary of anticipated supplies and demands through 2040. The City of Redlands is one of 10 water providers included in the RUWMP.

City of Redlands Water Efficient Landscape Requirements

Chapter 15.54 of the Redlands Municipal Code establishes the City's Water Efficient Landscape Requirements to promote the benefits provided by landscapes while recognizing the need to use water as efficiently as possible. The chapter requires applicable landscaping projects to submit a landscape documentation package that contains project information, hydrozone information table, water budget calculations, soil management report, and landscape, irrigation, and grading design plans. The chapter establishes requirements for irrigation scheduling, maintenance, and audits to ensure efficient use of water. The requirements also include provisions for non-potable water irrigation systems, and encourage stormwater best management practices to increase on-site retention and infiltration.

Stormwater

The City of Redlands' stormwater drainage system serves an area of approximately 37 square miles. Stormwater runoff flows by gravity into the Mission Channel, Morrey Arroyo Creek, and San Timoteo Canyon, and discharges to the Santa Ana River. Drainage throughout the city is generally from east to west to one of two main existing major stormwater drainage facilities.

Of concern to Redlanders is the quality of water that flows through the city. As rain falls onto the city streets and runs off, it carries with it pollutants such as pet waste, gasoline, oil, and heavy metals. Pesticides, herbicides, and fertilizers are washed from lawns and other green spaces. Sediments are eroded by wind and water from construction sites and vegetated landscape areas.

The City's stormwater management program is regulated by the NPDES stormwater permit, commonly known as MS4 permit, issued by the Regional Water Quality Control Board, Santa Ana Region. City ordinances require use of Best Management Practices (BMPs) for the control of pollutants that could potentially enter the storm drain system.



Bottom: Water is purified at a water treatment plant. Top: Filtration ponds are an example of Redlands' Best Management Practices for stormwater control.

POLICIES

Principles

- 6-P.19** Promote the protection of waterways in Redlands from pollution and degradation as a result of urban activities.
- 6-P.20** Pursue creative, innovative, and environmentally sound methods to capture and use stormwater and urban runoff for beneficial purposes.

- 6-P.21** Work with regional organizations to manage groundwater resources of the Bunker Hill Basin.

Actions

- 6-A.34** Update City development standards to improve the capture of runoff and stormwater management through innovative green and blue infrastructure solutions such as the use of permeable

surfaces, vegetation areas, swales, BMPs, and other methods to recharge the groundwater basin.

- 6-A.35** Promote the use of Low Impact Development strategies, BMPs, pervious paving materials, and on-site infiltration for treating and reducing stormwater runoff before it reaches the municipal stormwater system.

- 6-A.36** Require measures during construction and post construction to limit land disturbance activities such as clearing and grading and cut-and-fill; avoid steep slopes, unstable areas, and erosive soils; and minimize disturbance of natural vegetation and other physical or biological features important to preventing erosion or sedimentation.

- 6-A.37** Protect and, where feasible, enhance or restore the city's waterways, including zanjas and ditches, preventing erosion along the banks, removing litter and debris, and promoting riparian vegetation and buffers.

- 6-A.38** Encourage development that reflects an integrated approach to building design, civil engineering, and landscape architecture that maximizes rainwater harvesting and stormwater retention for landscape irrigation.

- 6-A.39** Require that new development provides landscaping and re-vegetation of graded or disturbed areas with drought-tolerant native or non-invasive plants.

- 6-A.40** Maximize the amount of pervious surfaces in public spaces to permit the percolation of urban runoff.

- 6-A.41** Provide a comprehensive public outreach program to educate residents and local businesses about the importance of stormwater pollution prevention.

- 6-A.42** Ensure that public areas, including streets and recreational areas, are routinely cleaned of litter, debris, and contaminant residue. Coordinate with and support efforts by other organizations or volunteer groups to promote cleanups of parks and public open spaces. Require the City, property owners, or homeowners' associations, as applicable, to sweep permitted parking lots and public and private streets frequently to remove debris and contaminated residue.

- 6-A.43** Ensure that post-development peak stormwater runoff discharge rates do not exceed the estimated pre-development rate. Dry weather runoff from new development must not exceed the pre-development baseline flow rate to receiving waterbodies.

- 6-A.44** Continue partnerships with other local agencies to implement the Area-Wide Urban Storm Water Runoff Management Program and the Integrated Regional Watershed Management Plan.



Pesticides and other chemicals are present in agricultural irrigation runoff.