the future of southern california

Murrieta

General Plan Update

Appendix H:

Biological Resources Existing Conditions Report

BIOLOGICAL RESOURCES

The policies in the Conservation and Open Space Element are now closely tied to the adopted Western Riverside County Multiple Species Habitat Conservation Plan (MSHCP). The Riverside County Board of Supervisors adopted the MSHCP on June 23, 2003. This section discusses in detail the biological resource issues and conservation goals for the City of Murrieta.

METHODS

Literature used to document the biological resources existing setting were the MSHCP (2003), the California Department of Fish and Game (CDFG) Natural Diversity Data Base (NDDB) (2009a), the California Native Plant Society (CNPS) Electronic Inventory, the United States Department of Agriculture (USDA) *Soil Survey, Western Riverside Area, California* (Soil Conservation Service 1971), United States Geological Survey (USGS) topographic maps, and California Water Quality Control Board hydrologic data.

CLIMATE

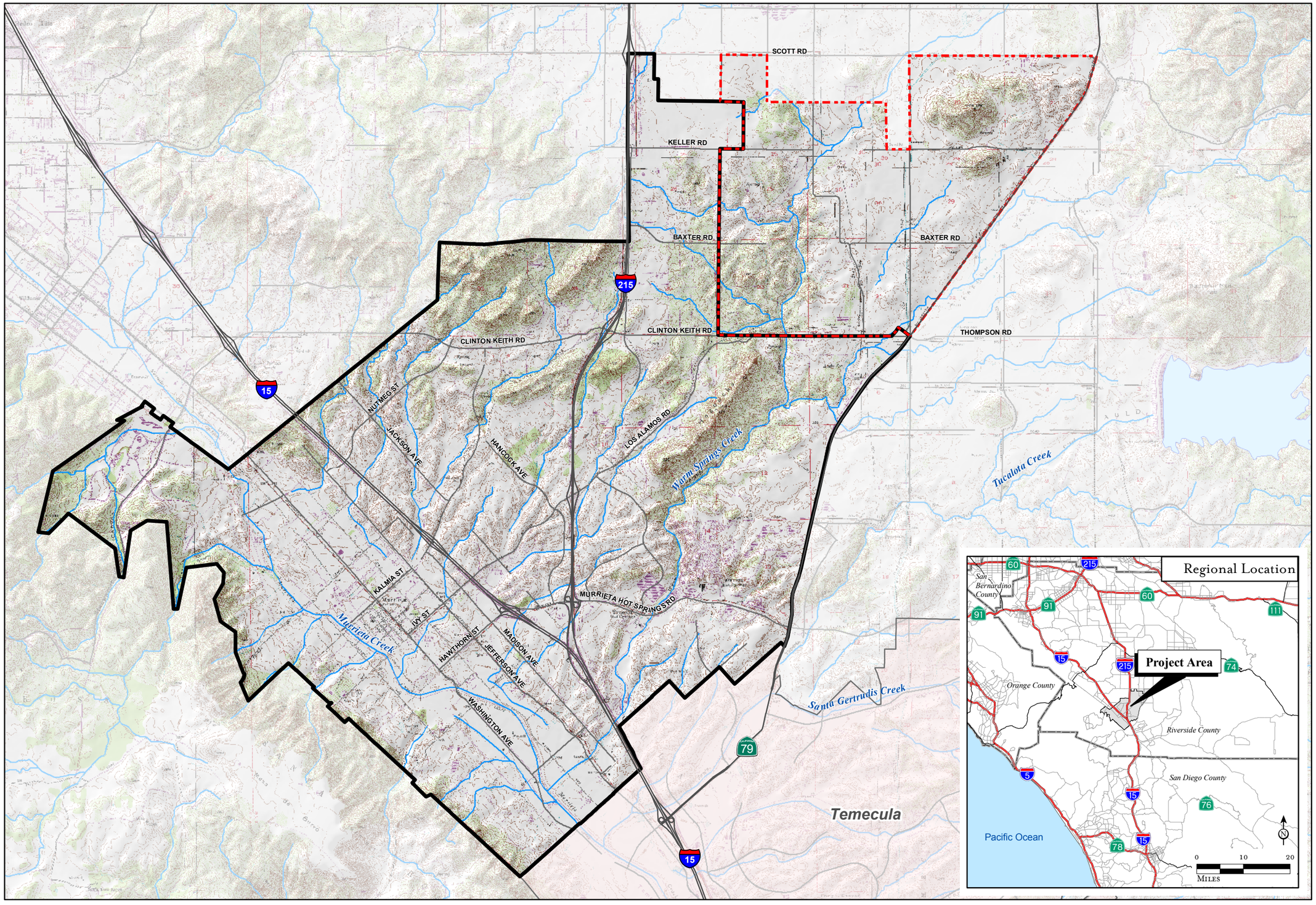
According to the Natural Resources Conservation Service (NRCS 2003), average rainfall is 9 to 18 inches, the average annual temperature is 59 to 65 degrees Fahrenheit, and frost-free days range from 230 to 300 days per year.

TOPOGRAPHY

The City of Murrieta (City) is located in the southern tip of the Riverside Lowlands bioregion. The City is surrounded by three foothill ranges—Sedco Hills, Tucalota Hills (Bachelor Mountain), and Santa Rosa Plateau—and two drainage areas—Murrieta Creek and Warm Springs Creek. Elevation ranges from approximately 1,050 feet to 1,550 feet above mean sea level (amsl). The City is built on a series of plateaus, each raising the land elevation by roughly 100 feet starting from Murrieta Creek, stepping up at Interstate 15 (I-15), again at Murrieta Hot Springs Road, and finally at the Hogbacks. The "Hogbacks" is a small range of foothills situated south to north (1 to 2 miles) with a 300-foot elevation gain above the valley floor. Other unique features within City limits include numerous freshwater springs and one active geothermal vent (Murrieta Hot Springs). Temecula Hot Springs is no longer an active hot spring. Exhibit 1 shows the topography of the region.

SOILS

The Cajalco-Temescal-Las Posas soil association is found in the northern half of the City above I-15. The Hanford-Tujunga-Greenfield association is found along the I-15 corridor and the Monserate-Arlington-Exeter is found along Murrieta Creek. Cieneba-Rock land-Fallbrook and the Friant-Lodo-Escondido associations are found on the north-facing slope of the Santa Ana Mountains below the



Legend

Sphere of Influence

City Boundary

January 11, 2010

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Miles

Source:
USGS 7.5' Quads: Lake Elsinore (88), Romoland (79), Winchester (79), Wildomar (88), Murrieta (79), Bachelor Mtn (73), CA; National Hydrography Dataset, 1999; City of Murrieta, 2009

LSA

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Regional and Project Location

Biological Resources

Exhibit 1

Santa Rosa Plateau. Exhibit 2 shows the boundaries of the soil associations and the mapped soil units that are relevant to MSHCP Species Survey Areas.

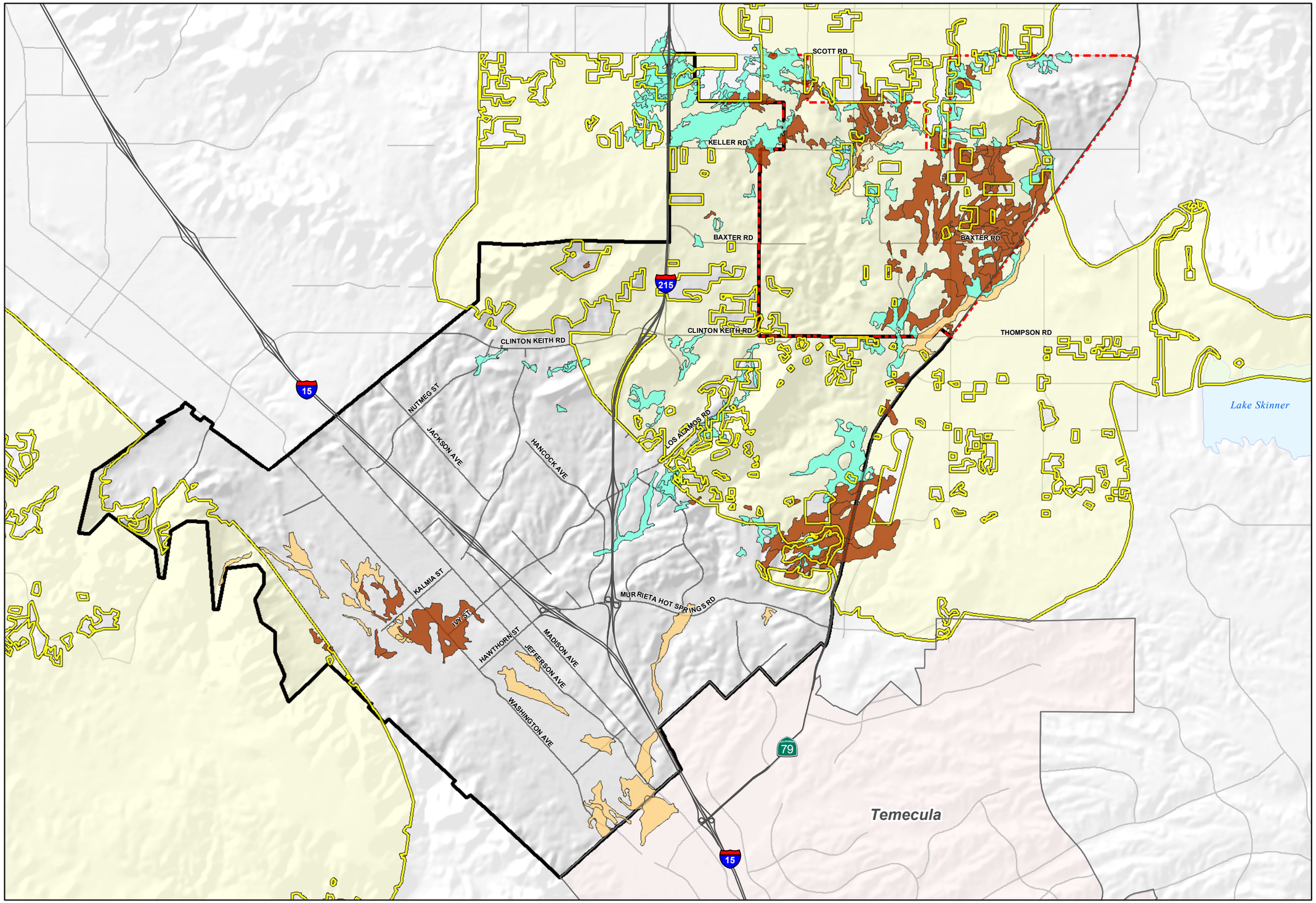
Soils with a variety of properties have been identified in the MSHCP as indicative of rare or listed plant and wildlife species. There are three categories: saline-alkali, heavy clays, and vernal pool soils. The saline-alkali category consists of soils classified by the NRCS as saline-alkali (NRCS mapping units Chino silt loam (Cf), Dello (DpB), Domino (Dt, Dv), Grangerville (GpB, GsB, GuB, GvB, GxA), Traver (Tr2, Ts), Willows (Wa, Wb, Wd, Wg, and Wm)) or strongly saline-alkali (NRCS mapping units Chino (Cg), Domino (Dw), Traver (Tt2), Willow (Wc, Wh, and Wn)). The heavy clays category consists of soils classified by the NRCS as clays (except alkali clays, which were included in the saline-alkali category). The heavy clays category includes NRCS mapping units Auld (AaD, AaE2, AaF, AbF, AuC, AuD, AyF), Bonsanko (BfC, BfD), Porterville (PoC, PrD, PsC, PtB, PvD2), and Willows (Wf). The category of other soils potentially supporting vernal pools (i.e., soils that are known to support vernal pools not already included in the saline-alkali and heavy clays categories) includes NRCS mapping units Las Posas (LaC, LaC2), and Wyman (WyC2). Table A describes the soil associations and the soil types found in the City of Murrieta and its sphere of influence.

Table A: Soil Associates and Soils Types

Soil Association	Description	Soil Types of MSHCP Importance
Cajalco-Temescal-Las Posas	Well-drained, undulating to steep, moderately deep to shallow soils that have a surface layer of fine sandy loam and loam; on gabbro and latite-porphyry. The major and minor soils of this association are known for higher clay content.	Auld, Las Posas, Bonsanko, Porterville clay soil types are found mainly in the sphere of influence. Also, Willow and Domino soils are mapped in the northeast corner of the study area.
Cieneba-Rock land-Fallbrook	Well-drained and somewhat excessively drained, undulating to steep, very shallow to moderately deep soils that have a surface layer of sandy loam and fine sandy loam; on granitic rock.	None
Friant-Lodo-Escondido	Well-drained and somewhat excessively drained, undulating to steep, shallow to deep soils that have a surface layer of fine sandy loam and gravelly loam; on metamorphosed sandstone and mica-schist.	None
Hanford-Tujunga-Greenfield	Very deep, well-drained to excessively drained, nearly level to moderately steep soils that have a surface layer of sand to sandy loam; on alluvial fans and floodplains. These soils are known to have higher alkalinity.	Grangerville soils (saline-alkali) are found along Murrieta Creek and Warm Springs Creek.
Monserate-Arlington-Exeter	Well-drained, nearly level to moderately steep soils that have a surface layer of sandy loam to loam and are shallow to deep to a hard pan.	None

HYDROLOGY

The City of Murrieta is located within the Murrieta Hydrologic Area (2.30) in the Santa Margarita River Hydrologic Unit, regulated by the San Diego Regional Water Quality Control Board (2007).



Legend

- Sphere of Influence
- City Boundary
- Narrow Endemic Plant Species Survey Area

Soil Associations*

- Heavy clays
- Other Vernal Pool Soils
- Saline-alkali

*Indicative of Narrow Endemics and other rare species

January 12, 2010

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Miles

Source:
SoilDataMart 2003;
County of Riverside, 2005.
City of Murrieta, 2009

LSA

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Soils and Survey Areas

Biological Resources
Exhibit 2

The unit is largely drained by the Santa Margarita River, Murrieta Creek, and Temecula River. Previously referenced Exhibit 1 provides an illustration of the tributaries within the study area.

PLANT COMMUNITIES

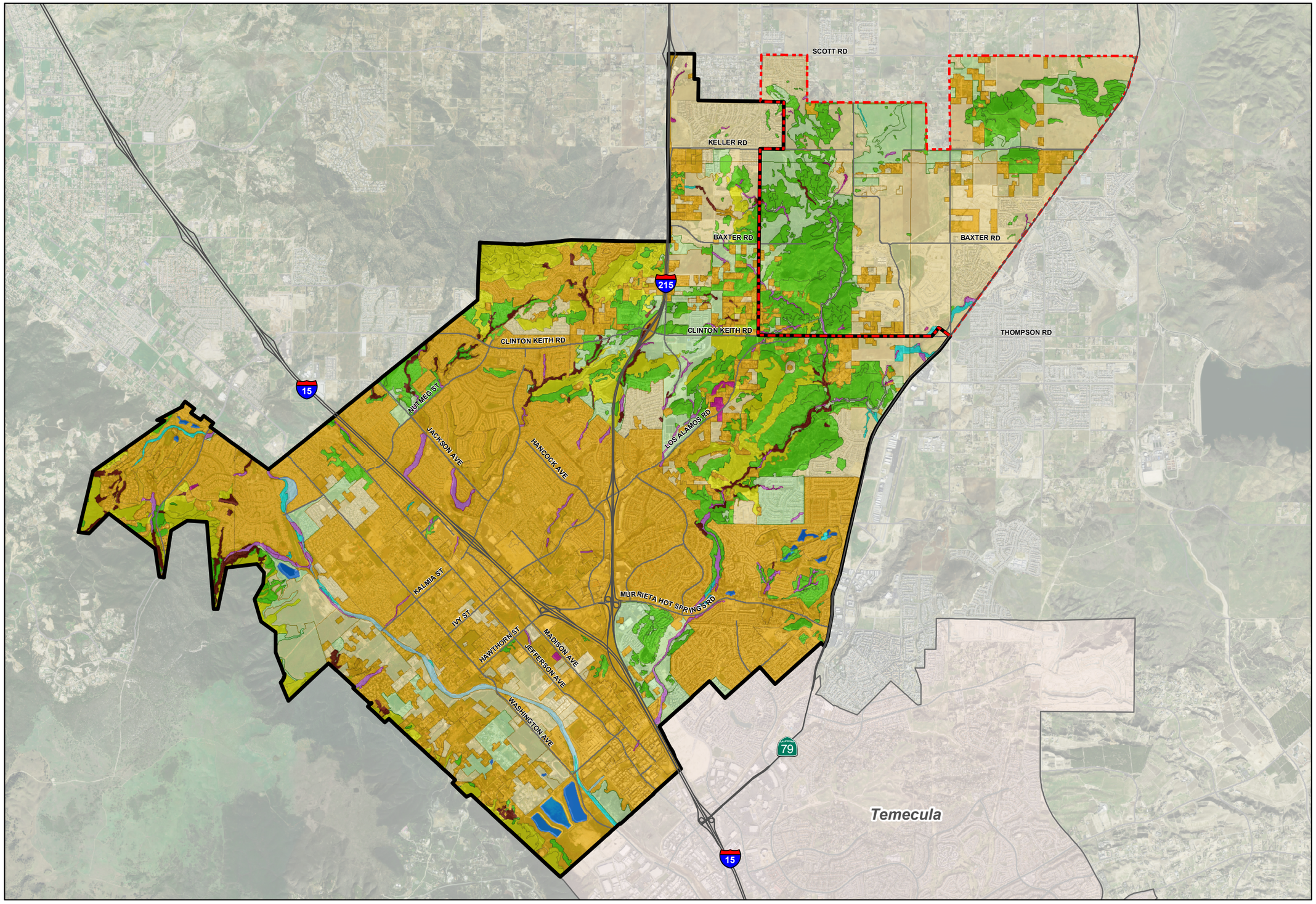
Currently, the City has approximately 8,374 acres of undeveloped land with potential wildlife habitat within the existing City limits and sphere of influence study area. This total excludes agricultural land. The City of Murrieta General Plan Update study area is 26,852 acres.

The County of Riverside has used the Wildlife Habitat Relationship (WHR) system of vegetation classification to map land cover and land use (CDFG 1998). The WHR is a standardized habitat classification scheme for California containing 59 habitats, structural stages for most habitats, and 124 special habitat elements (CDFG 2009b). The plant communities in the City include annual grassland, coastal sage scrub, chaparral, oak woodland, riparian, and wetlands. Table B lists more specific categories and acreages of the plant communities within the City. A description of the wildlife habitats found in the City follows the table. Exhibit 3 provides a color graphic of the potential wildlife habitat areas in the study area.

Table B: Wildlife Habitats with the City of Murrieta General Plan Update Study Area

Wildlife Habitat Relationship Habitats	Wildlife Habitat Relationship Mapping Units (Common Name)	Area (acres)
Annual Grassland	California annual grassland alliance	2,340
Coastal Oak Woodland	Five different plant associations	303
Coastal Scrub	Sixteen different plant associations	3,372
Cropland, Orchard, Vineyard	Agricultural Land Use	5,662
Eucalyptus	Eucalyptus Alliance	35
Fresh Emergent Wetland	Bulrush-cattail	107
Lacustrine	Water mapping unit	128
Mixed Chaparral	Twelve different plant associations	1,636
Riverine/Lacustrine	Sandbars, mud flats, riparian shrubs and trees associated with a river	137
Urban	Five different mapping units	12,816
Valley Foothill Riparian	Nine different plant associations	316
TOTAL		**26,852**

Annual Grassland. Introduced annual grasses are dominant plant species in this habitat. These include wild oats, soft chess, rip-gut brome, red brome, and foxtail fescue. Many wildlife species use annual grasslands for foraging along with other habitat features necessary for nesting or roosting or escape cover. Species commonly found in this habitat are western fence lizard, garter snake, western rattlesnake, black-tailed jackrabbit, California ground squirrel, Botta's pocket gopher, coyote, burrowing owl, horned lark, turkey vulture, kestrel, and red-tailed hawk.



Legend

- Sphere of Influence
- City Boundary

Vegetation and Land Use (2006)

- Annual Grassland
- Coastal Oak Woodland
- Coastal Scrub
- Cropland, Orchard - Vineyard
- Eucalyptus
- Fresh Emergent Wetland
- Lacustrine
- Mixed Chaparral
- Riverine, Lacustrine
- Urban
- Valley Foothill Riparian

January 13, 2010

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Miles

Source:
SoilDataMart 2003;
County of Riverside, 2005.
City of Murrieta, 2009

LSA

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Vegetation and Land Use

Biological Resources
Exhibit 3

Coastal Oak Woodland. Oak woodlands can be deciduous and evergreen hardwoods, either dense with closed canopy or widely spaced in a savannah-like setting. Understory may be absent or may be dense coastal scrub and chaparral. Dominant species are Engelmann oak, coast live oak, interior live oak, and California walnut. Over 60 species of mammals and 110 bird species use oak habitats.

Coastal Scrub. Plant associations in coast scrub are of low to moderately sized shrubs with semi-woody stems, woody bases, and shallow root systems known to grow in a moderate moisture climate. Species composition, diversity, and density vary greatly with change in geographic location. California sage brush, California buckwheat, deerweed, brittlebush, black sage, and white sage are common coastal scrub species in the City. The California gnatcatcher, a song bird federally listed as threatened, is found exclusively in coastal scrub habitat.

Cropland, Orchard, Vineyard. Croplands in association with orchards and vineyards are established on the most fertile soils in California, which historically supported high wildlife diversity and abundance. Some wildlife species have adapted to agricultural activities, but may be considered agricultural pests, thus their presence in agricultural areas can be managed to reduce loss of crop production.

Eucalyptus. Eucalyptus habitats are usually single species thickets, rows of individual trees, or stands of closed canopy mature trees. These trees provide roosting and nesting habitat for many raptors, such as red-tailed hawk and barn owls, along with crows and ravens. The eucalyptus groves also serve as resting places for migratory song birds, such as tanagers and orioles, and monarch roosting.

Fresh Emergent Wetland. An emergent wetland is dominated by erect perennial and herbaceous water-loving plants and one of the most productive wildlife habitats in California. Numerous bird species, reptiles, and amphibians use wetlands as their primary habitat.

Lacustrine. Lacustrine habitat is distinguished by the presence ponded water in depressions or dammed streambeds with standing water, either present year-round or intermittent and seasonal. Submerged, floating, or emergent vegetation would be present depending upon the depth of the water. Numerous mammals, birds, reptiles, amphibians, crustaceans, and insects use lakes and ponds for food, water, cover, and reproduction.

Mixed Chaparral. Chaparral is a homogenous brushland dominated by thick, stiff shrubs with evergreen leaves in a nearly impenetrable thicket. Chaparral habitat can have numerous species of woody plants. Chaparral supports many species known to occur in coastal shrub and forest habitats.

Riverine. This habitat is influenced by intermittent or perennial running water. The habitat includes open water, riffle-pool complexes, emergent water-loving plants, and adjacent riparian terrestrial

habitat. Waterfowl, eagles, herons, swallows, and flycatchers forage in riverine habitat. Beavers occupy the streams within the City.

Urban. Vegetation in urban settings includes tree groves, street strips, shade trees, lawns, and shrubs. Other classifications can be trees in between buildings, parks, open spaces, and ornamental gardens. Common species are mockingbird, scrub jay, acorn woodpecker, house finch, black phoebe, raccoon, opossum, and striped skunk. Suburban areas with large tracts of adjacent natural vegetation have increased wildlife diversity due to readily available water from landscape irrigation.

Valley Foothill Riparian. This habitat is known for statuesque cottonwoods, sycamores, and willows with either open understory or with shade-tolerant herbaceous or shrub species. Riparian habitats provide food, water, migration and dispersal corridors, escape cover, thermal protection, and reproductive sites.

WESTERN RIVERSIDE COUNTY MULTIPLE SPECIES HABITAT CONSERVATION PLAN

Currently, 988 acres are dedicated to wildlife habitat conservation based on 2003 permittee annual report data (County of Riverside 2005). Land parcels are set aside as Conservation Land to the meet the MSHCP land acquisition goals.

The Riverside County Board of Supervisors adopted the MSHCP on June 23, 2003. The City approved the MSHCP and is a Permittee under the MSHCP. The U.S. Fish and Wildlife Service (USFWS) and CDFG issued take permits under the Federal Endangered Species Act (16 U.S.C. 1531 et seq.) Section 10(a)(1)(b) and California Natural Community Conservation Planning Act (NCCP) (California Fish and Game Code, Section 2800 et seq.) in June 2004. The City now has the authority to meet the federal and state endangered species and conservation planning obligations for its jurisdiction (Western Riverside County Regional Conservation Authority 2007).

The City Department of Planning ensures development is consistent with the MSHCP Species Conservation Guidelines and Area Plan Conservation Criteria. The MSHCP, Permits, and Implementation Agreement serve as guiding documents for the implementation of the conservation goals and land use planning parameters now required by the local Permittees (cities).

The Western Riverside County Regional Conservation Authority (RCA), a joint powers authority, was established to assist the local permittees with MSHCP implementation. The RCA duties include administration of acquisitions and conservation easement dedication, land management, biological resource monitoring, and MSHCP fee collection and accounting.

The MSHCP Implementation Agreement lists the specific obligations required by the cities in order to be active participants in the MSHCP implementation process (RCA 2003). One of those obligations includes amending General Plans to implement the requirements of the MSHCP for public and private development projects. Other obligations are listed below.

1. City representation on the RCA Board of Directors and Reserve Management Oversight Committee (MSHCP Sections 6.6.2 and 6.6.4).
2. Collect Local Development Mitigation Fees and Long-term Stephens' Kangaroo Rat Habitat Conservation Plan (SKR HCP) fees, and transmit to RCA quarterly (MSHCP Section 8.5).
3. Meet the local Reserve Assembly contribution obligations through the Habitat Acquisition and Negotiation Strategy (HANS) for private development projects (MSHCP Section 6.1.1), for public projects at least 1:1 habitat mitigation ratio, and payment of Local Development Mitigation Fees for commercial and industrial development (MSHCP Section 7.0).
4. Comply with Joint Project Review process and annually transmit information on all projects within Criteria Cells (MSHCP 6.6.2).
5. Siting and Design Guidance and Best Management Practices for Covered Activities (MSHCP Section 7.0 and MSHCP Appendix C).
6. Riparian/Riverine and Fairy Shrimp Habitat (MSHCP Section 6.1.2), Narrow Endemic Plants (MSHCP Section 6.1.3), Criteria Area Survey Species (MSHCP Section 6.3.2), and Urban/Wildlands Interface Guidelines (MSHCP Section 6.1.4).
7. Enforce terms of project approvals for public and private projects using applicable land use permit enforcement procedures and practices to ensure compliance with MSHCP, Permits, and Implementation Agreement.
8. Manage MSHCP Conservation Area property and conservation easements owned or leased by the City (MSHCP Sections 5.0 and 8.0).

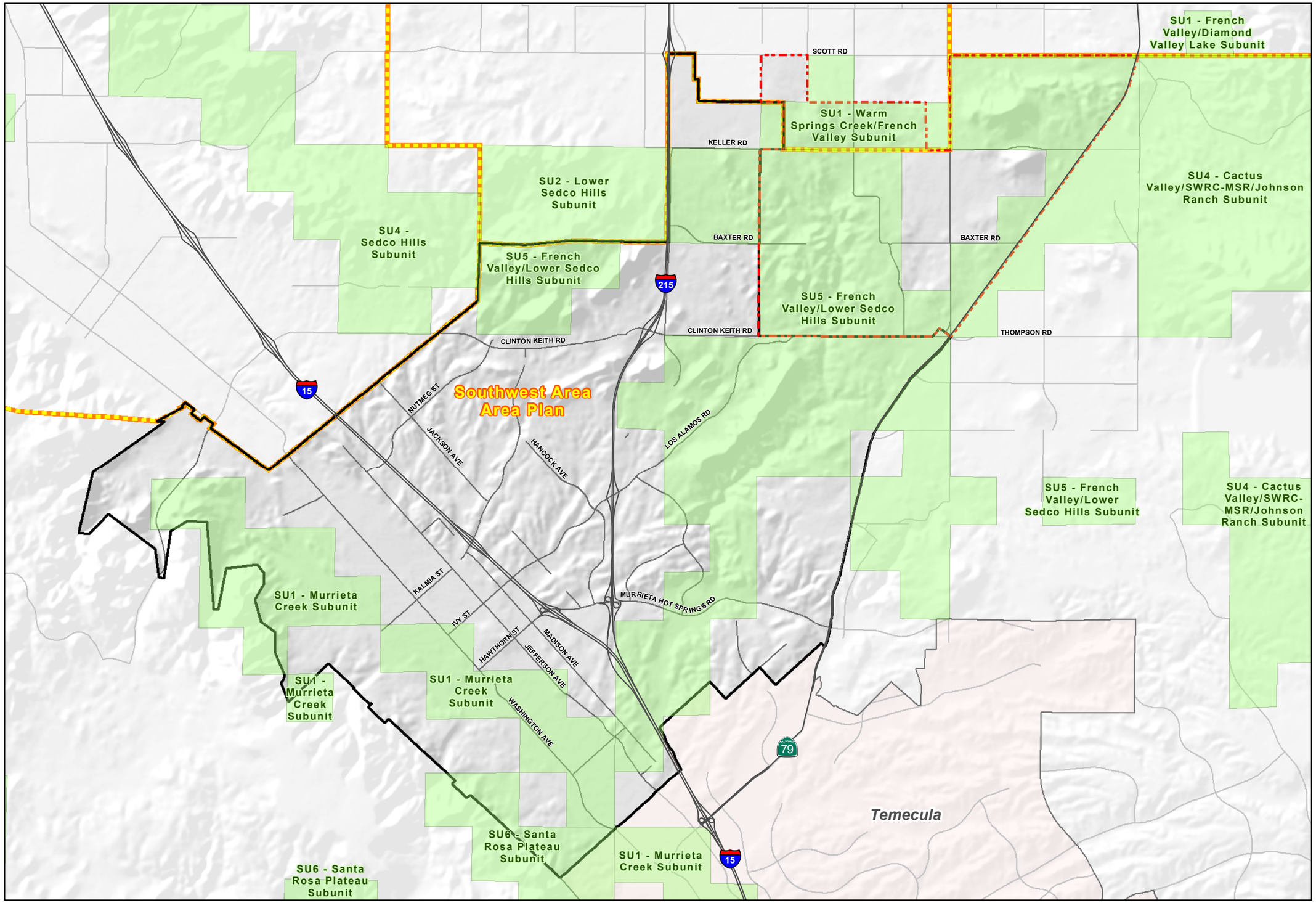
Exhibit 4 shows the existing Conserved Land along with Public/Quasi Public Land and dedicated conservation easements. The conceptual conservation scenario for the MSHCP Reserve Area is based on existing public lands, undeveloped land (Core Areas), and identified potential Linkages between the Core Areas. In order to describe and implement the proposed conservation objectives efficiently, the Reserve Area is subdivided into ¼ quadrants (or 160-acre Cells) based on USGS topographic map sections. The Cells are grouped into Area Plans and Subunits for ease of discussion and planning. See Exhibit 5.

The City encompasses the northern half of the Southwest Area Plan Subunit 1: Murrieta Creek and the majority of Subunit 5: French Valley/Lower Sedco Hills. Subunit 6: Santa Rosa Plateau Cells 6658, 6659, 6779, 6780, and 6781 are within the City limits. A portion of the sphere of influence includes Sun City/Menifee Area Plan Subunit 1: Warm Springs Creek/French Valley (Cells 5066, 5163, 5167, and 5168).

Conservation Goals

The Conservation Goals within the City and the sphere of influence (Antelope Valley) focus on Core Areas and wildlife movement Linkages. These are:

1. Proposed Core 2: Antelope Valley.
2. Proposed Linkage 8: Sedco Hills/Wildomar.



Murrieta
General Plan Update

Legend

- Sphere of Influence
- City Boundary
- Area Plan Boundary
- Area Plan Sub Units

January 12, 2010

0 0.5 1
Miles

Source:
AirPhotoUSA, 2008;
County of Riverside, 2006;
City of Murrieta, 2009

LSA

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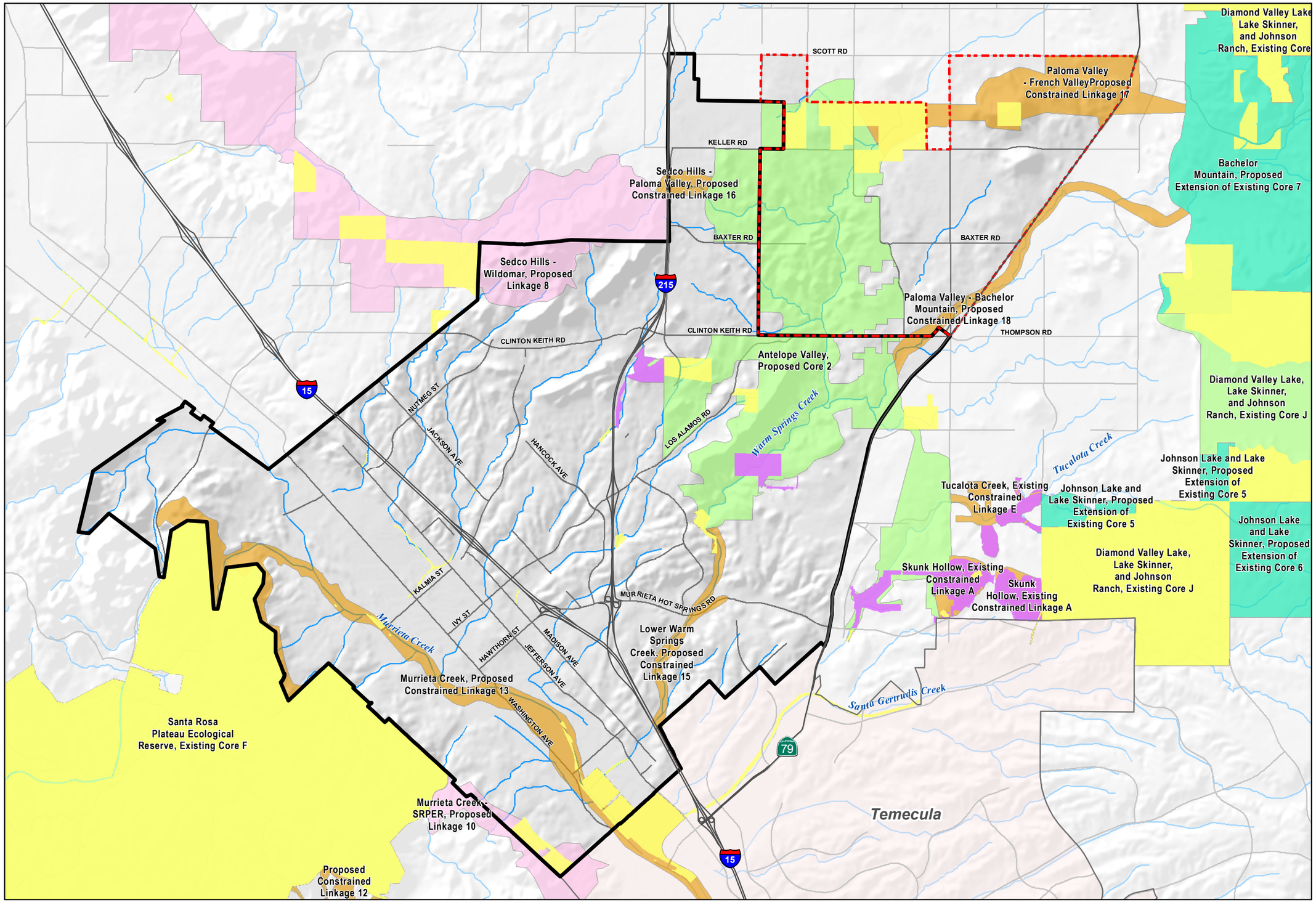
MSHCP Area Plans and Subunits

Biological Resources
Exhibit 4



Legend

Sphere of Influence

City Boundary

Conserved Lands

PQP Conserved Lands (2003)

Pre-existing Conservation Agreements (2003)

Proposed Linkages and Cores

Constrained Linkage

Linkage

Core

Extension of Existing Core

January 14, 2010

0 0.5 1

Miles

Source:
County of Riverside, 2003 & 2005;
City of Murrieta, 2009

LSA

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MSHCP Proposed and Existing Conservation Land

Biological Resources
Exhibit 5

3. Proposed Constrained Linkages.
    a. 13: Murrieta Creek.
    b. 15: Lower Warm Springs Creek.
    c. 16: Sedco Hills-Paloma Valley.
    d. 17: Paloma Valley-French Valley.
    e. 18: Paloma Valley-Bachelor Mountain.

Biological Issues and Considerations

Biological Issues and Considerations for the Southwest (SW) and Sun City/Menifee (SCM) Area Plan Subunits within the City and the sphere of influence are as follows.

1. **Murrieta Creek (SW1)** and **Santa Rosa Plateau (SW6)** maintain habitat function as riparian and aquatic species live-in habitat and large mammal movement linkage.
2. **French Valley/Lower Sedco Hills (SW5)** and **Warm Springs Creek/French Valley (SCM1)** maintain habitat Core for narrow endemic plants (saline/alkali and clay), Quino checkerspot butterfly, Riverside fairy shrimp, Los Angeles pocket mouse, western pond turtle, and habitat linkages through the City limits (east-west and north-south) for wildlife movement and plant dispersal.

Planning Species

Table C lists planning species used to focus conservation efforts and land acquisitions relevant to the City. Conservation goals focus on species associated with unusual soil types such as heavy clays, strongly saline-alkali loams, and soils with impenetrable layer that provide conditions required to form vernal pools. Listed species associated with specific soil types are Munz's onion, San Diego ambrosia, spreading navarretia, California Orcutt grass, and Quino checkerspot butterfly. Coastal scrub and chaparral habitat areas are important for the Quino checkerspot butterfly and California gnatcatcher. Annual grassland and coastal scrub habitat is important to listed Stephens' kangaroo rat. Riparian, lacustrine, and emergent wetland habitats are important to listed least Bell's vireo and southwestern willow flycatcher.

Table C: Species of Importance in the City of Murrieta General Plan Study Area (Western Riverside County Multiple Species Habitat Conservation Plan)

Species	Status	Habitat and Description	Activity Period
Plants			
Allium munzii **Munz's onion**	US: FE CA: ST CNPS: 1B MSHCP: S	On clay soils in openings within coastal sage scrub, pinyon juniper woodland, and grassland; 300 to 1,070 meters (1,000 to 3,500 feet) elevation. Known only from western Riverside County in Temescal Canyon, Gavilan Plateau, Bachelor Mountain, and Skunk Hollow areas. Clay soils on mesic exposures or seasonally moist microsites in grassy openings of coastal sage scrub, chaparral, juniper woodland, or valley and foothill grassland.	Blooms April through May (Perennial bulb)

Table C: Species of Importance in the City of Murrieta General Plan Study Area (Western Riverside County Multiple Species Habitat Conservation Plan)

Species	Status	Habitat and Description	Activity Period
Ambrosia pumila **San Diego ambrosia**	US: FE CA: SP CNPS: 1B MSHCP: S	Occurs in open habitats, usually near drainages or vernal pools, usually in sandy loam or on clay (including upland clay slopes) from 20 to 487 meters (70 to 1,600 feet) elevation. Known from western Riverside and western San Diego Counties. Also occurs in Mexico. Open floodplain terraces on Garretson gravelly fine sandy loams, or in the watershed margins of vernal pools or alkali playas on Las Posas loam in close proximity to Willow silty alkaline soils. Occurs in sparse annual vegetation.	Generally non-flowering (perennial herb)
Atriplex parishii **Parish's brittlescale**	US: – CA: SP CNPS: 1B MSHCP: S	Alkali meadows, vernal pools, chenopod scrub, and playas. Usually on drying alkali flats with fine soils. In California, known from Riverside, San Diego, and Orange Counties. Also occurs in Mexico. Believed extirpated from Los Angeles and San Bernardino Counties. Domino, Willows, and Traver soils in alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains.	Blooms June through October (annual herb)
Atriplex serenana var. *davidsonii* **Davidson's saltscale**	US: – CA: SP CNPS: 1B MSHCP: S	Alkaline soils in scrub and herbaceous communities from 10 to 460 meters (30 to 1,500 feet) elevation. In California, known only from Los Angeles (?), Orange, Riverside, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Santa Barbara and perhaps Los Angeles Counties. Also occurs in Mexico. Domino, Willows, and Traver soils in alkali vernal pools, alkali annual grassland, alkali playa, and alkali scrub components of alkali vernal plains.	Blooms April through October (annual herb)
California macrophylla (*Erodium macrophyllum)* **Round-leaved filaree**	US: – CA: SP CNPS: 1B MSHCP: S	Clay soils in woodland, scrub, and grassland communities from 15 to 1,200 meters (50 to 4,000 feet) elevation. Known from central and south coastal areas and the Central Valley in California. Also occurs in Oregon and Mexico. Clay soils in open cismontane woodland (e.g., oak, juniper woodlands) and valley and foothill grassland. The MSHCP account for this species states that it is restricted to "very friable clay soils...Within the Plan Area, two of the mapped localities occur on Bosanko clay soils" and that "this species tends to be associated primarily with wild oats (*Avena fatua*)."	Blooms March through May (annual herb)
Centromadia pungens ssp. *laevis* **Smooth tarplant**	US: – CA: SP CNPS: 1B MSHCP: S	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. Primarily alkaline soils in alkali scrub, alkali playas, riparian woodland, watercourses, and alkaline grasslands. The MSHCP account for this species states that "Suitable habitat for the smooth tarplant includes alkali scrub, alkali playas, and grasslands with alkaline affinities...smooth tarplant is restricted to clay and alkaline, silty-clay soils."	Blooms April through November (annual herb)

Table C: Species of Importance in the City of Murrieta General Plan Study Area (Western Riverside County Multiple Species Habitat Conservation Plan)

Species	Status	Habitat and Description	Activity Period
Dudleya multicaulis **Many-stemmed dudleya**	US: – CA: SP CNPS: 1B MSHCP: S	Heavy, often clay soils or around granitic outcrops in chaparral, coastal sage scrub, and grassland below 790 meters (2,600 feet) elevation. Known only from Los Angeles, Orange, Riverside, San Bernardino, and San Diego Counties. Clay soils in barrens, rocky places, ridgelines, and thinly vegetated openings in chaparral, coastal sage scrub, and southern needlegrass grasslands. Visible population size varies considerably year-to-year depending on rainfall patterns. The MSHCP account for this species states that "Many-stemmed dudleya is associated with openings in chaparral, coastal sage scrub, and grasslands underlain by clay and cobbly clay soils of the following series: Altamont, Auld, Bosanko, Claypit, and Porterville."	Blooms April through July (perennial herb)
Lasthenia glabrata ssp. *coulteri* **Coulter's goldfields**	US: – CA: SP CNPS: 1B MSHCP: S	Usually alkaline soils in marshes, playas, vernal pools, and valley and foothill grassland below 1,400 meters (4,600 feet) elevation. Known from Colusa, Merced, Tulare (?), Orange, Riverside, Santa Barbara, San Diego, San Luis Obispo, and Ventura Counties. Believed extirpated from Kern, Los Angeles, and San Bernardino Counties. Also occurs in Mexico. Traver, Domino or (usually) Willows soils in alkali scrub, alkali playas, vernal pools, and alkali grasslands. The MSHCP account for this species states that "Coulter's goldfields is restricted to clay and alkaline, silty-clay soils."	Blooms February through June (annual herb)
Myosurus minimus ssp. *apus* **Little mousetail**	US: – CA: SP CNPS: 3 MSHCP: S	Alkaline areas in vernal pools at 20 to 640 meters (70 to 2,100 feet) elevation. Known only from the Central Valley of California and the coastal and inland areas of Southern California. Alkaline soils in vernal pools and vernal plains. The MSHCP account for this species states that "little mousetail is found in areas that have semiregular inundation."	Blooms March through June (annual herb)
Navarretia fossalis **Spreading navarretia**	US: FT CA: SP CNPS: 1B MSHCP: S	In vernal pools, playas, shallow freshwater marshes and similar sites at 30 to 1,310 meters (100 to 4,300 feet) elevation. In California, known only from Los Angeles, San Luis Obispo, Riverside, and San Diego Counties. Also occurs in Mexico. Alkaline soils and southern basaltic claypan in vernal pools. The MSHCP account for this species states that, in Riverside County, it "is found in southern basaltic claypan vernal pools at the Santa Rosa Plateau, and alkaline vernal pools as at Skunk Hollow and at Salt Creek west of Hemet."	Blooms April through June (annual herb)
Orcuttia californica **California Orcutt grass**	US: FE CA: SE CNPS: 1B MSHCP: S	Vernal pools from 15 to 660 meters (50 to 2,200 feet) elevation. In California, known from Los Angeles, Ventura, Riverside, and San Diego Counties. Also occurs in Mexico.	Blooms April through August (annual grass)

Table C: Species of Importance in the City of Murrieta General Plan Study Area (Western Riverside County Multiple Species Habitat Conservation Plan)

Species	Status	Habitat and Description	Activity Period
Trichocoronis wrightii var. *wrightii* **Wright's trichocoronis**	US: – CA: SP CNPS: 2 MSHCP: S	Alkali meadows, river beds, vernal pools, and lakes at 5 to 435 meters (20 to 1,430 feet) elevation. In California, known from the Central Valley and Riverside County. Also occurs in Texas and Baja California. Alkali soils in alkali playa, alkali annual grassland, and alkali vernal pools. The MSHCP account for this species states that "Wright's trichocoronis is restricted to highly alkaline, silty-clay soils in association with Traver, Domino, and Willows soils..."	Blooms May through September (annual or perennial herb)
Insects			
Euphydryas editha quino **Quino checkerspot butterfly**	US: FE CA: SA MSHCP: C	Meadows or openings within coastal sage scrub or chaparral below about 5,000 feet where food plants (*Plantago erecta* and/or *Orthocarpus purpurascens*) are present. Historically known from Santa Monica Mountains to northwest Baja California; currently known only from southwestern Riverside County, southern San Diego County, and northern Baja California.	January through late April
Reptiles			
Actinemys marmorata (pallida) **Western pond turtle**	US: – CA: CSC MSHCP: C	Inhabits permanent or nearly permanent water below 1,830 meters (6,000 feet) from central California, west of the Sierra-Cascade crest south to north-western Baja California. Absent from desert regions, except in the Mojave Desert along the Mojave River and its tributaries. Requires basking sites such as partially submerged logs, rocks, or open mud banks.	Year-round with reduced activity November through March
Birds			
Accipiter cooperii (nesting) **Cooper's hawk**	US: – CA: SA MSHCP: C	Forages in a wide range of habitats, but primarily in forests and woodlands. These include natural areas as well as human-created habitats such as plantations and ornamental trees in urban landscapes. Usually nests in trees 20–60 feet in height in extensive forested areas (generally woodlots of 4–8 hectares with canopy closure of greater than 60%). Occasionally nests in isolated trees in more open areas.	Year-round
Aimophila ruficeps canescens **Southern California rufous-crowned sparrow**	US: – CA: SA MSHCP: C	Steep, rocky coastal sage scrub and open chaparral habitats, particularly scrubby areas mixed with grasslands. From Santa Barbara County to northwestern Baja California.	Year-round, diurnal activity
Ammodramus savannarum (nesting) **Grasshopper sparrow**	US: – CA: CSC MSHCP: P	Grasslands, agricultural fields, prairie, old fields, and open savanna. Uncommon and very local summer resident on grassy slopes and mesas west of the deserts. Only rarely in migration and in winter. Coastal Southern California.	Coastal: Year-round; only casually in migration elsewhere

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Species	Status	Habitat and Description	Activity Period
Amphispiza belli belli **Bell's sage sparrow**	US: – CA: CSC MSHCP: C	Occupies chaparral and coastal sage scrub from west central California to northwestern Baja California.	Year-round, diurnal activity
Athene cunicularia (burrow sites) **Burrowing owl**	US: – CA: CSC MSHCP: S	Open country 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. Often utilizes man-made structures, such as earthen berms, cement culverts, cement, asphalt, rock, or wood debris piles. They avoid thick, tall vegetation, brush, and trees, but may occur in areas where brush or tree cover is less than 30 percent.	Year-round
Buteo swainsoni (nesting) **Swainson's hawk**	US: – CA: ST MSHCP: C	Grassland and agricultural areas; large trees for nesting. Breeds and nests in western North America; winters in South America; in California nesting is essentially restricted to Central Valley and Modoc Plateau.	Spring and fall (in migration)
Dendroica petechia brewsteri (nesting) **California yellow warbler**	US: – CA: CSC MSHCP: C	Riparian woodland while nesting in the western U.S. and northwestern Baja California; more widespread in brushy areas and woodlands during migration and winter, when occurring from western Mexico to northern South America. Migrants belonging to other subspecies are widespread and common.	Summer, winter, or year-round, depending on locale
Empidonax traillii extimus **Southwestern willow flycatcher**	US: FE CA: SE MSHCP: S	Rare and local breeder in extensive riparian areas of dense willows or (rarely) tamarisk, usually with standing water, in the southwestern U.S. and northwestern Mexico. Winters in Central and South America.	May through September
Eremophila alpestris actia **California horned lark**	US: – CA: SA MSHCP: C	Open grasslands and fields, agricultural area, open montane grasslands. This subspecies is resident from northern Baja California northward throughout non-desert areas to Humboldt County, including the San Joaquin Valley and the western foothills of the Sierra Nevada (north to Calaveras County). Prefers bare ground such as plowed or fall-planted fields for nesting, but may also nest in marshy soil. During the breeding season, this is the only subspecies of horned lark in non-desert southern California; however, from September through April or early May, other subspecies visit the area.	Year-round interior (inland areas)
Lanius ludovicianus (nesting) **Loggerhead shrike**	US: – CA: CSC MSHCP: C	Open fields with scattered trees or shrubs, open country with short vegetation, pastures, old orchards, cemeteries, golf courses, riparian areas, and open woodlands. Found in open country in much of North America.	Year-round

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Species	Status	Habitat and Description	Activity Period
Polioptila californica californica **Coastal California gnatcatcher**	US: FT CA: CSC MSHCP: C	Inhabits coastal sage scrub in low-lying foothills and valleys in cismontane southwestern California and Baja California.	Year-round
Tachycineta bicolor **Tree swallow**	US: – CA: – MSHCP: C	Riparian scrub, woodland and forest, water, oak woodlands and forest. Nests in older trees and snags.	Year-round
Vireo bellii pusillus **Least Bell's vireo**	US: FE CA: SE MSHCP: S	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
Mammals			
Dipodomys stephensi **Stephens' kangaroo rat**	US: FE CA: ST MSHCP: C	Found in plant communities transitional between grassland and coastal sage scrub, with perennial vegetation cover of less than 50%. Most commonly associated with *Artemesia tridentata, Eriogonum fasciculatum,* and *Erodium.* Requires well-drained soils with compaction characteristics suitable for burrow construction. Not found in soils that are highly rocky, 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. In northwestern Riverside County, known only from east of Interstate 15. 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
Lynx rufus **Bobcat**	US: – CA: – MSHCP: C	Chaparral, coastal sage scrub, desert scrub, montane coniferous forest, riparian scrub, woodland and forest, Riversidean alluvial fan sage scrub	Year-round
Perognathus longimembris brevinasus **Los Angeles pocket mouse**	US: – CA: CSC MSHCP: S	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.

LEGEND	
US: Federal Classifications	
FE	Taxa listed as Endangered.
FT	Taxa listed as Threatened.
CA: State Classifications	
SE	Taxa State-listed as Endangered.

ST	Taxa State-listed as Threatened.
CSC	California Species of Special Concern. Refers to animals with vulnerable or seriously declining populations.
SA	Special Animal. Refers to any other animal monitored by the Natural Diversity Data Base, regardless of its legal or protection status.
SP	Special Plant. Refers to any other plant monitored by the Natural Diversity Data Base, regardless of its legal or protection status.
CNPS: California Native Plant Society Classifications	
1B	Plants considered by CNPS to be rare, threatened, or endangered in California and elsewhere.
2	Plants considered by CNPS to be rare, threatened, or endangered in California, but more common elsewhere.
3	Plants suggested by CNPS for consideration as endangered but about which more information is needed.
MSHCP: Western Riverside County MSHCP Status	
S	Species is adequately conserved under the MSHCP, but surveys are required within indicated habitats and/or survey areas.
C	Species is adequately conserved under the MSHCP.
P	Species is covered but not considered adequately conserved pending completion of MSHCP specified requirements.

CRITICAL HABITAT

Currently, there is no designated or proposed critical habitat in the City of Murrieta. “Critical Habitat” is a term applied to areas designated by the USFWS to be of biological importance to federally listed species (2000). It is a specific geographic area that is essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as “critical habitat” following publication of a proposed federal regulation in the Federal Register and receipt and consideration of public comments on the proposal. The final boundaries of the critical habitat area are also published in the Federal Register.

Federal agencies are required to consult with the USFWS on actions they carry out, fund, or authorize to ensure that their actions will not destroy or adversely modify critical habitat. In this way, a critical habitat designation protects areas that are necessary for the conservation of the species. A critical habitat designation has no effect on situations where a federal agency is not involved (e.g., a landowner undertaking a project on private land that involves no federal funding or permit).

WATERS OF THE U.S., WETLANDS AND STREAMS

The U.S. Army Corps of Engineers (ACOE) typically regulates as *waters of the United States*; that is, any body of water displaying an ordinary high water mark (OHWM). ACOE jurisdiction over non-tidal waters of the United States extends laterally to the OHWM or beyond the OHWM to the limit of any adjacent wetlands, if present (33 CFR 328.4). The OHWM is defined as “that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding area” (33 CFR 328.3). Jurisdiction typically extends upstream to the point where the OHWM is no longer perceptible.

The CDFG, through provisions of the California Fish and Game Code (Sections 1601–1603), is empowered to issue agreements for any alteration of a river, stream or lake where fish or wildlife resources may be adversely affected. Streams (and rivers) are defined by the presence of a channel bed and banks, and at least an intermittent flow of water. The CDFG regulates wetland areas only to the extent that those wetlands are part of a river, stream, or lake as defined by the CDFG.

The Federal Clean Water Act and California Fish and Game Code Section 1600 et seq. still apply to projects within the City even though the MSHCP is approved and certain guidelines apply to riparian, riverine, and aquatic habitats and vernal pools. Any proposed impacts to permanent or seasonally ponded water bodies and ephemeral, intermittent, or perennial streambeds in the City of Murrieta will continue to require a delineation report and jurisdictional determination by the ACOE, Regional Water Quality Control Board (RWQCB), and the CDFG.

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